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A PRACTICAL TREATISE

ON THE MEDICAL PROPERTIES

OF THE

AIX-LA-CHAPELLE

HOT SULPHUREOUS WATERS

AND THE

MODE OF THEIR EMPLOYMENT.

BY

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Preface.

The present book is founded on numerous observations made during a period of twenty nine years, during which I have been constantly residing and practising at Aix-la-Chapelle. It has been written in order to comply with the wishes of English patients and friends of mine belonging to the profession of England, by whom I have been frequently and repeatedly requested to compose a book in English on the Aix-la-Chapelle sulphureous waters, on the same principles as the treatise written by me in French *) on this subject six years ago.

The time which has now elapsed since the latter publication, has been of some advantage to the present book, as it has enabled me to revise it and to make many additions. Thus, for instance the number of cases which are given in detail has been doubled, which I think will be the more wel-

*) *Traité pratique des propriétés curatives des eaux thermales sulfureuses d'Aix-la-Chapelle et du mode de leur emploi par L. Wetzlar, D. M. 1856.*

come to the profession, as several of the new cases are most important, viz. those regarding progressive muscular atrophy, syphilitic cerebral affection, waxy degeneration of the liver etc.

I have done my best to give a clear and accurate description of the effects produced by the waters, and trust that the profession will find in the present publication the same impartial description and unprejudiced examination of facts, for which credit was given to the „traité“, wherever it was mentioned by the Continental or English periodical medical press. I may therefore be permitted to hope that those colleagues, to whose benevolent confidence I am indebted for a great part of the cases, on the observation of which this publication is founded, will receive favourably a book which claims no other merit but what is due to a faithful report of facts, observed in cases of patients, the greater part of whom they were kind enough to recommend to my care, and to a candid exposition of the principles by which I am guided in the treatment of their patients.

I have limited my task to a description of what is observed in patients while under a course of waters, and of the modifications in their state of health brought on by the use of the springs, and to a detailed statement of what I consider to be the proper principles of the treatment. My chief object was to explain in what cases the use of the springs can be employed with advantage, and where they are

to be considered as injurious. Not wishing to enter into forced theories, I have not tried to explain their mode of action. Latterly several German balneologists have laid great stress upon analyses of the urine as a means of ascertaining the mode of action of mineral waters; and, indeed, if there existed at any watering place a large hospital for poor bathers, in which analyses of urine could be made on a great scale on patients being in the meanwhile under constant and attentive control, medical science might gain by such researches. But I do not think that an analysis made on the urine of two or three individuals, as it is usually the case, can be of much service in clearing up the mystery in which the mode of action of mineral waters is enveloped.

I have omitted adding a chapter on the regimen to be observed during a course of waters. As the regimen of the visitors of the springs must be suited to the ailment, the constitution and the habits of the patients, I should have been obliged to give nearly a complete treatise of general dietetics, if I did not choose to treat this subject superficially. But, as the regimen of patients who are taking the waters cannot be founded on other principles than those which are received in general dietetics, I have considered the addition of such a chapter unnecessary.

I must claim the indulgence of the reader, if when perusing this treatise he should meet, here

and there, with errors in the diction or with germanisms or gallicisms, and beg him to bear in mind that the author is not an Englishman but a German who, though he has long moved in English society, makes no pretention to write the English free from criticism.

Aix-la-Chapelle in March 1862.

The author.

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CHAPTER I.

On the physical and chiminal qualities of the hot sulphureous waters
and on the bathing-establishments at Aix-la-Chapelle.

A decided taste of common salt, some alkaline substances and sulphur is common to all the warm springs at Aix-la-Chapelle. There are four springs, of which the so called Emperor's spring has the most pronounced sulphureous taste and smell. The temperature of the springs varies from 113 to 131 degrees Fahrenheit. The water, when taken directly from the spring, is clear and colourless, and reddens litmuspaper; but, having been exposed for a short time to the air, it becomes dim and turns alkaline, and a sediment is formed; but being exposed to the air for a longer time, it loses all its smell and taste of sulphur.

The springs which originate in the upper part of the town (in the Büchelstrasse and on the Buttermarkt), and supply the bath-houses situated in the neighbourhood, and also the Elisenbrunnen, are called the Higher springs. Those which supply the bath-houses in the Compesbadstrasse and on the Damengraben, are called the Lower springs. The former are of a higher temperature, and contain more solid and volatile substances than the latter. The higher springs are the Emperor's and the Quirinus spring. The lower are, the Rosenbad (Rosebath) spring and the Cornelius spring.

According to *Liebig*, who analysed the Aix-la-Chapelle springs in 1851 their Temperature is:

	According to Reaumur's Thermometer.	According to Celsius's Thermometer.	According to Fahrenheit's Thermometer.
The Emperor's spring	44	55	131
„ Quirinus „	39,7	49,7	121,32
„ Rose „	37,6	47	116,6
„ Cornelius „	36,3	45,4	113,67

Their specific gravity is (at 16° Celsius):

In the Emperor's spring. .	1,00349
„ „ Quirinus „ . .	1,00327
„ „ Rose „ . .	1,00315
„ „ Cornelius „ . .	1,00305

Composition of these waters according to *Liebig*:

A. In one thousand parts:

Not volatile ingredients.	Emperor's spring.	Cornelius spring.	Rose spring.	Quirinus spring.
a. In ponderable quantity.				
Chloride of Sodium.	2,63940	2,46510	2,54588	2,59595
Bromide of Sodium.	0,00360	0,00360	0,00360	0,00360
Jodide of Sodium.	0,00051	0,00048	0,00049	0,00051
Sulphuret of Sodium.	0,00950	0,00544	0,00747	0,00234
Carbonate of Soda	0,65040	0,49701	0,52926	0,55267
Sulphate of Soda	0,28272	0,28664	0,28225	0,29202
Sulphate of Potassa	0,15445	0,15663	0,15400	0,15160
Carbonate of Lime	0,15851	0,13178	0,18394	0,17180
Carbonate of Magnesia . . .	0,05147	0,02493	0,02652	0,03346
Carbonate of Iron	0,00955	0,00597	0,00597	0,00525
Silica	0,06611	0,05971	0,05930	0,06204
Organic substance	0,07517	0,09279	0,09151	0,09783
Carbonate of Lithia	0,00029	0,00029	0,00029	0,00029
Carbonate of Strontian. . . .	0,00022	0,00019	0,00027	0,00025
b. In not ponderable quantity.				
Carbonate of Manganese . .	—	—	—	—
Phosphate of alumina	—	—	—	—
Fluate of Lime	—	—	—	—
Ammonia.	—	—	—	—
Sum of the not volatileContents	4,10190	3,73056	3,89075	3,96961

B. In one pound = 7680 grains.

Not volatile contents. In grains.	Emperors spring.	Cornelius spring.	Rose spring.	Quirinus spring.
Chloride of Sodium.	20,2705	18,9339	19,5520	19,9369
Bromide of Sodium.	0,0276	0,0276	0,0276	0,0276
Jodide of Sodium.	0,0040	0,0037	0,0038	0,0039
Sulphuret of Sodium.	0,0729	0,0418	0,0574	0,0180
Carbonate of Soda	4,9950	3,8170	4,0647	4,2444
Sulphate of Soda	2,1712	2,2014	2,1757	2,2427
Sulphate of Potassa.	1,1861	1,2039	1,1827	1,1643
Carbonate of Lime	1,2173	1,0121	1,4125	1,3294
Carbonate of Magnesia. . . .	0,3952	0,1917	0,2036	0,2569
Carbonate of Strontian. . . .	0,0016	0,0015	0,0021	0,0019
Carbonate of Iron	0,0733	0,0458	0,0458	0,0403
Silica	0,5077	0,4586	0,4554	0,4764
Organic substance	0,5773	0,7126	0,7023	0,7513
Carbonate of Manganese. . .	—	—	—	—
Phosphate of alumina	—	—	—	—
Fluate of Lime	—	—	—	—
Carbonate of Lithia	0,0022	0,0022	0,0022	0,0022
Ammonia.	—	—	—	—
Sum of the not volatile Contents	31,5019	28,6538	88,2938	30,4963

Gaseous contents, which are developed by boiling in a vacuum.

1000 Cubic-Centimeters (= 1 Litre) of water contain at 0° and 760 Mm. pressure.

Absorbed gases in Cubic- Centimetres.	Emperors spring.	Cornelius spring.	Rose spring.	Quirinus spring.
Azote	12,78	12,54	14,71	7,31
Carbonic acid	126,94	148,46	145,40	106,30
Bihydroguret of Carbon . . .	0,52	Slight.	0,89	0,30
Sulfuret of Hydrogen	—	—	—	—
Oxygen	1,76	—	—	00,9
The whole volumen in Cubic- Centimetres	142,00	161,00	161,00	114,00

Gases rising in the water.

100 volumina of the Emperors springs contain:

Azote	66,98
Carbonic acid	30,89
Bihydroguret of Carbon	1,82
Sulphuret of Hydrogen	0,31
Oxygen	0,00
	100,00

The Emperor's spring supplies the Elisenbrunnen, whose water is only used for drinking, the New-bathhouse and the bathhouse of the Queen of Hungary. In place of the old Emperor's bathhouse, which is being pulled down, a new and splendid building will be erected, which will be also supplied by the Emperor's spring. The Quirinus spring provides with water the Quirinus bathhouse. The Rose bathhouse is supplied from the Rosebath spring, which also supplies the Poor bathhouse. The Cornelius spring provides the Cornelius and Charles bathhouses.

From the chemical analysis quoted, it is evident that all the springs contain the same component parts, and that the only difference between them, is with regard to the quantities of the substances and to the temperature of the water, which difference is, nevertheless, worth the consideration of the physician, when appointing the spring in the individual case. There are large reservoirs in each bathhouse for cooling the mineral water. The bathhouses contain bathing-rooms for common sulphureous baths, as well as apparatuses for douches and vapour-baths. The bathing-rooms are supplied with water both from the springs and the reservoirs. While the water issuing from the spring enters the bathing-room without any considerable loss of its temperature, the communication of the reservoir with the bathing-room, permits of supplying the latter with cooled water. The temperature of the springs

being too high to permit of their immediate use for bathing, the temperature, which is required, is given to the bath either by mixing the cooled water coming from the reservoir with the hot water from the spring, or by filling the bath with hot water some hours before it is used, and allowing it to cool down to the required temperature.

The apparatus for douches and the way in which it is employed are excellent. The water intended for douching, is cooled down to a temperature of from 90 to 100 degr. F. according to circumstances. This water is pumped up into a leaden cistern, which is placed in such a position as to give a fall of from twenty-four to twenty-eight feet. Leaden tubes, ending in an elastic leather-pipe, conduct the water down into the bathing-room. In every bath-house there are persons called *frotteurs* and *frotteuses*, the former applying the douche to gentlemen, the latter to ladies. These people are taught to manage the elastic leather pipe according to the directions of the physician. When applied in a perpendicular direction to any part of the body, the douche, certainly, has greater force and is more exciting, than when falling at an obtuse angle. If persons are too sensitive to bear the douche even at an obtuse angle, the force of the jet is broken by the interposition of the hand of the man or woman who gives the douches. The jet may be increased or diminished by letting it pass through a corresponding aperture, the size and shape of which are very important. For a jet, which is concentrated by the aperture through which it flows, is more exciting than a jet which, by running through an aperture with many little holes, like those of a water-pot, is divided and consequently weakened. The Aix-la-Chapelle *frotteurs* have a well deserved reputation for their skill in the management of the douche-pipe, and in rubbing and champing of the morbid parts, and for their dexterity in stretching and bending of contracted limbs. The use of the douches is generally combined with a bath.

The patients, usually, first take a bath of some minutes, and are then douched; after which they continue the bath for some time. The time of the preparatory bath, of the douching and the length of time which the patient is to remain in the bath afterwards, depends on the disease, and the accompanying circumstances.

A peculiar sort of douche, the *ascending* douche, is a very efficacious apparatus, and very useful in diseases of the rectum and of the vagina and uterine.

The vapour arising from the springs, is made use of for another mode of applying the waters, the *Vapour-bath*. For the most part, in the vapour-baths, the whole body, except the head, is exposed to the steam of the spring. A wooden box, with an aperture in its upper part to pass the head through, is placed above a hole which is in direct communication with the spring. After having remained for some time in the box, the patient is brought into a well warmed bed in an adjoining room. The perspiration promoted by the vapour, generally, becomes even more copious while remaining in the bed. The duration of the bath, and the time of remaining in bed depend on the state of the patient.

Besides this sort of vapour-bath, the New-bath Hotel possesses another kind, which is also very well arranged, where the whole body, without excepting the head, is exposed to the vapours. In some affections of the air-passages, this sort of vapour-bath is preferable. — In the bath-houses there are also apparatuses for the local application of the vapours.

CHAPTER II.

On the effects of the springs, and the mode of employing them.

Like all other efficacious medicines, the Aix-la-Chapelle hot mineral waters are recommended in ailments which, apparently, have but very little in common with each other. However strange this may appear at first sight, it can be easily explained. For, many diseases, though they may appear under different symptoms, are brought on by the same causes; thus a medicinal agent, provided its action is directed against the latter, may cure various ailments, however different their symptoms may be, if their origin is the same. Checked perspiration, for instance, may bring on a rheumatism as well as a skin disease, may cause a paralysis in some cases, and a neuralgy in others; therefore, as these waters increase the action of the skin, they will be of use in ailments widely different, provided they emanate from a disturbed function of the skin. Abuse of metallic medicines and metallic poison bring on paralysis as well as dyspepsy, swellings or ulcers. But all these alterations of health, though they differ so much in outward appearance, are cured by the sulphureous springs, originating, as they do, from the same cause.

Further, as sundry acute maladies are cured under the same crises, the cure of chronic diseases differing from each other, is frequently effected by an increase or alteration of the very same secretion — an event daily witnessed in patients under treatment by the Aix-la-Chapelle hot springs.

After all, it is not astonishing that great results are obtained by varying the method of applying the waters according to the variety of the cases, and that by prescribing the inward use only to one patient, by ordering plain baths to another, by advising a third to take douches

or vapour-baths, by combining these various processes, or by judiciously alternating with them, cures are effected, which otherwise would be scarcely possible.

The sanative action of the waters being, for a great part, dependent on a judicious mode of their use, I prefer speaking of this first.

Thus, in the *first* part of this chapter, I shall give an exposition of the various manners of using the springs, and of the effects of each mode of employment, whilst the *second* part will be dedicated to observations on the effects of the treatment by these waters in general.

PART I.

The various modes of employing the springs, and their effects.

1. Inward use of the springs.

The water of the *Elisenbrunnen*, as coming from the strongest and most efficacious spring, is drunk in preference. There are but few persons who have an aversion to it, and this only in the beginning; most patients like the water, and even those who first took it but reluctantly, soon become reconciled to its taste. Almost all patients, after having drunk their tumblers, perceive a pleasant sensation of warmth in the stomach, which soon spreads over the whole body. Whenever the inward use of these waters is indicated, — and for the present I am only speaking of such cases — neither eructation nor nausea follows, nor is there any fullness of the stomach perceived. Appetite increases. The circulation is not essentially modified by the drinking, it is only subject to those slight alterations, which are the consequences of the exercise taken whilst drinking the waters. A few minutes rest after the last tumbler, generally, will make the pulse as quiet and as regular as before. It is only after the waters have been taken for a certain length of time, and the

constitution begins to be influenced by them, that their tonic virtues show themselves in the circulation, and a pulse, which was before weak, will be felt stronger and fuller. Perspiration gradually increases, and, now and then, becomes even abundant. The secretion of urine is increased, while at the same time it undergoes a change. Thus, where there is a tendency to uric acid, the urine, generally, will become free from it and gain a clearer colour. It is but natural that, wherever perspiration becomes too abundant, through the use of the waters, the secretion of urine should not considerably increase. On the other hand, a very copious secretion of urine, generally, excludes an increase of perspiration.

The mucous membranes of the larynx and the bronchi are also influenced by the waters. Excessive sensibility and morbid secretion of these tissues are diminished.

Though this water is easily digested, it is injurious when taken in cases of irritation of the mucous membrane of the stomach, and when this organ is not free from crudities, viz. where there is an accumulation of bile, mucus etc. Without acting as an aperient medicine, these springs promote a regular action of the bowels. I am the more disposed to ascribe this effect to an augmented tone of the intestinal muscular coats, as I frequently had an opportunity of noticing the tonic virtues of the Aix-la-Chapelle waters in cases of debility of the muscular system in general, whether they were employed both inwardly and outwardly, or but used as baths. Now and then, certainly, a slight constipation is observed, especially when the increase of urine or sweat comes on very quickly.

It is evident, that a medicinal agent of decided tonic virtues, which is acting on the perspiration, and while increasing the secretion of the kidneys changes the quality of the urine, must exercise great influence upon the composition of the blood. It is true, that this change of the blood must remain a supposition, as long as we are not

possessed of a sufficient number of accurate chymical analyses of the substances, eliminated from the blood through the urine during a course of waters. But daily experience gives us sufficient proofs of the influence of the waters on the blood, and when we watch their effects in gout, in scrofula, in metallic cachexies, there can scarcely be any doubt left about their alterative qualities.

As for the *quantity* of the mineral water which is to be drunk, it will always be best to begin with a small dose of from about five to ten ounces, which may be gradually increased, if it is well borne, and if a larger dose is required. Before increasing the dose, particular attention ought to be paid to the state of the circulation. If the pulse is found excited, the dose must not be augmented, and, sometimes, it will even be prudent to diminish it. If we were to go on increasing the dose without taking notice of the circulation, we should expose our patients to serious consequences. A fever brought on by too large doses of the water, is far from exercising a salutary influence, and widely differs from a febrile reaction which appears during a well guided course. As it is impossible to foretell the result of a violent crisis promoted by an immoderate use of the waters, it is better to try to obtain a cure by their prudent employ. The state of the digestive organs ought likewise to be taken into consideration, before the dose is increased. Whenever, after having emptied his tumblers of mineral water, the patient complains of a fullness of the stomach, however transient it may be, a larger dose is to be avoided. In general, the dose of the water should depend on the disease and on the constitution of the patient. Persons, for instance, who are suffering from the abuse of mercury or from the consequences of any metallic poison, require a larger dose than gouty people, and persons with a delicate stomach, ought to begin but with the smallest doses. The physicians of the seventeenth and eighteenth centuries, sometimes,

prescribed a hundred ounces and more; but from thirty to forty ounces are considered, now, to be a pretty good dose, and from fifty to sixty ounces form an exception. „For, as the late Dr. *Kortum* judiciously observed, if the water, when taken in excessive quantities, does not leave the system quickly, it brings on dyspepsy; if, on the contrary, it passes too rapidly by the urine, it does not circulate long enough with the blood to influence its composition. If diarrhoea or profuse sweats are brought on by an excess of mineral water, the constitution is weakened.“

The water does not agree with a full stomach, and is, therefore, to be taken the first thing in the morning. Most patients should walk about when drinking the waters, and allow an interval of some minutes to elapse between each glass drunk. For some patients it is advisable to drink the waters when in bed. I often gave this advice to nervous persons with a weak stomach, and to those, who from great general debility, were not equal to taking exercise early in the morning. I had every reason to congratulate myself on this precaution, for by so doing I have frequently succeeded in curing patients who had tried in vain to take the waters in the usual way. In some cases, a second dose of the waters can be taken in the afternoon. The best moment for this dose is, when the last meal is already digested, and not too short a time before the next one. The water can be taken at every time of the year, but the patients finding no shelter at the public fountain in winter, they ought to drink the water in a bathhouse at this season.

2. On the external application of the Aix-la-Chapelle sulphureous springs.

a. On plain baths *).

These baths agree best and produce a good effect only, when their temperature is suited to the constitution of the

*) It is necessary to remark here, that when speaking here and further on of plain baths, baths of sulphureous water are to be understood.

bather. We are sure to find the proper temperature in each case, if we allow ourselves to be guided by the patient's own sensations. The bath will not be well borne, at all events, the patient will derive no benefit from it, if he does not feel perfectly comfortable while in it. He should neither shiver nor perceive an unpleasant heat.

Whether the salutary effects of a bath of a warm pleasant temperature, are to be explained by a greater absorption of the substances contained in the liquid, is a question which I will not attempt to answer either affirmatively or negatively; for, the results of the researches of several all equally trustworthy experimentators on the faculty of the skin to absorb in a bath, are so contradictory to each other that, unless further and more numerous experiments have cleared up all doubts on this subject, it is impossible to form a decided opinion upon it. That absorption takes place and, if existing, to what extent, is at the present time quite as difficult to tell, as whether the action of the baths on the human frame be owing to the presence of gases in the liquid and, to their absorption through the skin and lungs. Having but a practical object in view, I do not think myself called upon to enter into theories and, I rest satisfied with declaring that the action of the bath permits of no doubt, and with recommending such a temperature for the baths, as, by long practice, I have found to be both innocuous and most efficacious. The constitutions and the habits of the patients being so widely different, the same temperature of the bath cannot, surely, be suitable in all cases. I have met with patients who found a temperature of 90 F. excessively hot, while others felt chilly in a bath of 96. Generally speaking, a bath of from 90 to 96 is the most beneficial and agrees the best.

The duration of a bath should likewise be varied according to the patients. That the liquid should not pass through the epidermis in a bath of from but fifteen to twenty

minutes, and that three quarters of an hour at least should be necessary for this — as was an axiom of Magendie — appears to me devoid of all foundation. For, having seen a good many cases, where it would have been rather difficult to account for the results obtained through short baths, otherwise than by imbibition, I am satisfied that there is no absolute rule for the time requisite for absorption, and that it varies considerably *). Unfortunately there is no foretelling, with certainty, how long the bath ought to last in every case. The experiments which have been made on absorption in long baths, are neither sufficient in number, nor have offered such unquestionable results, as to permit of our being guided by them when directing the use of the waters. The effects of the baths and the sensations felt by the patients while in the bath, are of infinitely greater importance, and deserve the greatest attention on the part of the medical attendant, who ought never to lose sight of the ailment, the constitution and the habits of his patients. Some patients of mine did very well, and derived the greatest possible benefit from a bath of from fifteen to twenty minutes, whereas, I was obliged to prescribe to others a bath of even two hours. A long bath does not agree with nervous persons. People with a smooth skin and, generally, those who are apt to perspire, are not in need of so long a bath as others with a dry, rough skin. Chronic eczema does not require such long baths, as psoriasis or pityriasis. A patient whose joints are swollen from gout or chronic rheumatism, requires a longer bath than another who is suffering from neuralgy.

*) In two cases of progressive muscular atrophy it was found necessary to prescribe baths of two hours to obtain a favourable result, whereas to five other patients, affected with the same disease, baths of half an hour only, and to another patient baths of forty minutes proved advantageous.

In a bath of proper temperature, a soft and pleasant warmth of the skin is perceived; the circulation and respiration are quieted and become less frequent; the secretion of the kidneys is increased. After the bath, the vitality of the skin is found to be greater, and there is a tendency to perspire. The perspiration generally is but moderate, and only becomes more copious, when the course has been continued for some time. — A bath, when taken at the proper temperature, and when not protracted too long, will always be both soothing and strengthening. A sleepiness, which frequently comes on after it, cannot be considered as a sign of debility. Several patients of mine who had always felt themselves weakened after baths of common water, were not a little surprised at the strength which they gained from the sulphureous baths. The tonic action of the baths is not limited to the skin alone, but extends likewise to the muscular and nervous systems, which is clearly proved by their effects in muscular atrophy and in paralysis.

The Aix-la-Chapelle warm baths do not make the skin more sensitive, which I think worth mentioning, as many people believe, that after a course of warm baths one is more liable to catch cold than before. With regard to these waters, at least, this opinion is wholly unfounded. I know several instances of persons who, when cured here of old-standing rheumatism, returned home into a damp, cold country, sometimes even in the cold season, and had no return of their rheumatism for many years afterwards, though they took no more than common care of themselves.

The Aix-la-Chapelle baths have this in common with all other warm baths, that they free the skin from foreign matter; but, while they are more cleansing than plain waterbaths, they are not so exciting as baths of some other mineral waters. On the contrary, when properly employed, they act in a soothing way in many cases of

excessive nervous irritability, as we often witness in neuralgic pain, and in that nervous irritability which is frequently connected with some cutaneous diseases. Though an acute inflammation will certainly be aggravated by these baths, a chronic inflammatory state will often find relief through them. I should not prescribe them in acute eczema, though I have often experienced their efficacy in the chronic forms of it. An articular swelling, as long as there is inflammation, will become worse from these baths, whereas it will be benefitted, at a more advanced period.

Though in many cases the warm sulphureous baths can only be considered as auxiliaries to the internal use of the waters, I have met with many instances, in which they were of primary importance, and produced the most salutary effects without the ingestion of the water, which the system could not have borne. How often a bath is to be taken, whether every other day, or once or twice a day — depends entirely on the constitutions of the patients and on the nature of their complaints. The physician directing the use of the baths at a watering place, must be guided, in this respect, by the general principles of science, just as if he were prescribing any other medicine.

b. On vapour-baths, their effects and use.

The vapour-baths may be used with advantage by the greater part of those bathers, for whom an abundant perspiration may be supposed to be beneficial. As the internal use of the waters, by itself, increases the action of the skin also, it is evident that both these methods of using the waters, when simultaneously resorted to, must be still more efficacious. The function of the skin is so highly important, its sympathy and antagonism to the internal organs are so manifold, that an increase of perspiration, as it is promoted by these vapour-baths, cannot but have the greatest influence upon the other tissues.

We daily witness the benefits derived from perspiration in acute diseases; if there could be any doubt as to its sanative action in chronic ailments, the successes, obtained through repeated vapour-baths in certain cases of chronic rheumatism, of neuralgy and in metallic cachexies, would bear sufficient evidence to it. Up to the present moment, the chemical analysis of normal perspiration has given but imperfect results, and we know still less about the composition of the secretion of the skin in diseases. But the increase of perspiration, effected by vapour-baths, is followed by such consequences that, when witnessing them, we cannot help thinking, that perspiration is the best way through which the economy frees itself from foreign matter. It does not appear improbable to us, that the gases, which the vapours are impregnated with, also exercise some influence upon the constitution, especially, when we consider what great successes have been obtained through gas-baths at other watering places. — Next to the general action of the vapour-baths, their local effects ought to be mentioned. They soothe pain in chronic rheumatism and its consequences, and in neuralgy; they reduce articular swellings, soften muscular contractures, mitigate excessive pain in ulcers, and improve the character of their secretion. In chronic affections of the mucous membranes of the air-passages, I do not consider myself justified to attribute the advantages, derived from vapour-baths, to increased perspiration alone, but I am disposed to ascribe, at least, a part of their efficacy to the local contact of the vapours with the affected tissues, for I frequently observed, that patients affected with ozaena or with chronic bronchial or laryngeal catarrh, derived more benefit from the vapour-baths, when the whole body, the head not excepted, was exposed to the vapour.

A good number of chronic ailments arising from checked perspiration, a medicinal agent, like the vapour-bath, which works upon the action of the skin may, be calculated to

procure great successes. The sulphureous vapour-baths are advantageously employed even in cases, where other sudorific medicines previously used, have failed to relieve. Besides, it is proved by numerous observations, that they have the great advantage over them of not weakening the patients. It is to be doubted, whether other sudorifics could be employed for such a length of time, as we sometimes are obliged to employ the vapour-baths, without seriously impairing the constitution. This may partly be owing to the circumstance that, the waters drunk simultaneously act as a tonic, and that the appetite is increased by the waters as well as by the exercise taken during the course, whereas other sudorific medicines generally exclude exercise. But in whatever way we may try to explain it, the undiminished vigour in most of those patients who are taking vapour-baths, is a well established fact. Out of several instances, which prove it clearly, I will only record the two following.

Case 1. Mr. A., a Belgian merchant, aetat. 36, had taken strong doses of mercury for various secondary affections without benefit, but was afterwards, according to appearances, cured by iodide of potassium. But this cure did not last long, and about a year afterwards, a swelling appeared on the sternum, which resisted all attempts to cure it. He therefore came to Aix-la-Chapelle in June 1841. The swelling was of the size of a small walnut and showed fluctuation. The bone around the tumour formed a rough prominent wall, and was beyond doubt affected with caries. It was important to prevent the swelling from bursting, and I ventured to prescribe directly vapour-baths and the internal use of the waters combined with iodide of potassium. Though of a lymphatic constitution and already much debilitated, the patient bore this treatment very well, and, as I perceived a decrease of the swelling from the first beginning of the course, I went on with it, and the patient took a vapour-bath every day. After a lapse of thirty-two days, during which he had taken as many vapour-baths, the swelling had entirely disappeared without leaving a trace behind. The patient enjoyed perfect good health, looked very well, and, notwithstanding the profuse perspiration caused by the vapour-baths, his weight had increased by four pounds since his arrival. (The patient having told me, that when weighing himself just before leaving home, he had found his weight greatly

diminished, I had requested him to weigh himself again before he left Aix-la-Chapelle.)

Case 2. An English gentleman, attended by me in 1857 and 59, took the following notes about his weight while taking vapour-baths:

„In 1857 Mr. B., came to Aix-la-Chapelle and after taking the baths (vapour) and drinking the waters for two or three weeks, weighed himself, and his weight was found to be 7 stone 13 pounds. In a fortnight, from that time, he gained 5 pounds, and in another fortnight 4 more, his weight being then 8 stone 8 pounds. He shortly afterwards left Aix-la-Chapelle. In 1859 Mr. B. came again to Aix-la-Chapelle and took the baths (vapour) as before, viz. every other day. On the 22^d of July, the day after he arrived, he weighed 126 pounds or 9 stone. On the 6th of August his weight was 9 stone 4 pounds. On the 17th of August he weighed 9 stone 4 pounds.“ The patient left on the 18th of August.

The circulation is greatly excited during a vapour-bath. Though this excitement generally passes off soon afterwards, it is important to proscribe these baths to patients subject to determinations of blood to the head, and to those affected with diseases of the heart.

As to the number of minutes which a patient should remain in the vapour, how long he is to lie in bed afterwards, and how many vapour-baths are to be taken, there is no general rule; for our treatment must be guided in each case by taking into minute consideration the complaint, the constitution of the patient and the concomitant circumstances.

The vapour arising from the water can be used also for local application alone. We have recourse to the local vapour-baths in cases of a local excess of sensibility, and in swellings. Wherever a general vapour-bath is counter-indicated either by the constitution of the patient, or by a complication in a case of malady, which otherwise would make its use desirable, the local vapour-bath may be resorted to as a substitute for the general one.

c. On douche-baths.

The primary effect of the douches is always exciting. They irritate the skin, increase its temperature, and some-

times bring on a slight prickling sensation. The circulation is accelerated, the pulse and respiration become more frequent. But the douche is administered too cautiously at Aix-la-Chapelle to bring on too great an excitement, and the repose which most patients are directed to take in the bath after the „frotteur“ has left, certainly contributes to make the excitement pass off. Thus the patients, generally, feel refreshed and strengthened a little while after the bath. The effects of this powerful agent are not confined to the skin alone, but extend also to the muscles and nerves. One great advantage of the douches is, that their application can be modified according to our object, for we can both stimulate and soothe by them. Thus, when in making use of the douche in paralysis, we wish to increase the action of the nerves and muscles, we shall generally prescribe a full jet and in a perpendicular direction, combined with strong friction*). Most patients thus affected, will be advised to leave the bath either directly or a short time after the douching is over. On the other hand, if the douche is applied in neuralgia, it may be given under an obtuse angle with moderate friction, and the patient is to remain some time in the bath after the frotteur is gone. We may call this the direct soothing application of the douche. But there are cases of neuralgia, which are of too old standing and too deeply rooted, as to yield to such mild douches, and in which it is preferable to excite the integuments by strong douches, so as to bring on a counter-irritation, from which we may, in an indirect way, expect a soothing effect on the subjacent nerves. The douche is used likewise as a counter-irritant in affections of the fibrous or serous tissues, and great benefit is derived from such an application of it, in cases of rheumatism of the fibrous aponeuroses of the thorax and abdomen and of the

*) Paralysis of organs, which would not bear a perpendicular jet, naturally forms an exception.

serous membranes covering the thoracic and abdominal organs.

A medicinal agent which increases the action of the skin, accelerates the circulation, and adds tone to the muscles and nerves, will certainly stimulate resorption, and thus we frequently see large rheumatic and gouty swellings disappear under, or after the use of the douches.

The douches have another great advantage, which deserves to be mentioned, viz. that by invigorating the skin and the subjacent tissues, they enable the constitution to resist better the atmospheric changes.

The *ascending douche*, chiefly in use in diseases of the womb, is a powerful stimulant. In swellings of the neck of the womb, — provided there is no inflammation nor any tendency to it — it is of great service. In atonic fluor albus great benefit is derived from it also. A case of strictures of the rectum, which were entirely cured by it, has already been quoted in my little book on these waters, which appeared in 1842. Obstinate constipation is said to have yielded to this apparatus. Though I never made use of it under those circumstances, I think it might be occasionally employed with advantage.

PART II.

Remarks on the effects of a course of waters in general. Crisis. After-effect. Duration of the treatment.

The effects of the internal use of the waters and of their outward employ, either in the form of plain baths, vapour- or douche-baths, having been elucidated separately, the general effects of a course of the Aix-la-Chapelle sulphureous springs now remain to be detailed. The waters, when properly used, are both soothing and invigorating. It is only in the first days of the treatment that, now and then, a lassitude is observed, but in general it very soon goes off, leaving a sensation of bodily vigour and mental cheerfulness. The secretion of the kidneys and of the

skin is increased. Notwithstanding a perspiration, which is sometimes very copious, the strength is not impaired, probably, because the increased appetite supplies the economy with the means of repairing the loss of organic substance. The skin becomes smoother, and seems softer to the touch. In cases indicating the use of these waters, the pulse generally becomes stronger and fuller, whilst its celerity is diminished and its regularity continues unaltered. In active determinations of blood to the brain, and in organic diseases of the heart which, in general, some cases of atrophy and some other slight affections perhaps excepted, absolutely proscribe their inward use and permit only a moderate external application, the pulse becomes irregular and hard, and headache, giddiness and febrile symptoms frequently follow, as I had an opportunity of observing in patients who had taken the waters without medical advice.

Crisis.

The waters generally act mildly upon the constitution, and relief or recovery is obtained without any excitement or febrile reaction. In the majority of cases, nothing is observed but a gradual decrease of the morbid symptoms. This decrease is sometimes preceded or accompanied by an increase or by the sudden apparition of some secretion, especially increased perspiration and urine, and, as I noticed in some cases, by a discharge of mucus from the urinary or genital organs. Diarrhoeas, which occasionally come on, are generally caused by some deviation from diet or by a cold, and are but very seldom the precursors of a cure. The eruption which is now and then observed, and which consists in small red spots or thin flat pimples, is quite independent from the general influence of the waters upon the system, as it is merely brought on by local irritation of the skin, caused by the waters, and consequently has no prognostic signification whatever. Those spots or

pimples generally fade away in a few days by themselves. The cases, which are cured under a febrile reaction, a *crisis*, are comparatively rare. The symptoms under which a reaction comes on, are seldom so distinctly pronounced as to constitute what is called a „bath-fever“. In general a lassitude, a depression of spirits, a costiveness of the bowels, a lessened appetite and a pulse a little fuller or a little more contracted, now and then a slight chilliness, are the only symptoms which are perceived. But as these symptoms seldom appear together, the critical movement may escape the notice of the patient as well as of the doctor, especially if the latter does not see his patient often. For obtaining a cure, it is important that such a reaction should be properly treated. In some cases the reaction must be mitigated, in others, where the reaction is too weak, it must be aided in order to promote an energetic revulsion, sometimes it simply indicates that, for the moment, the system is saturated with mineral water, and that it will be best to suspend the course for some time. Now and then, as in the following case, the reaction must be considered as the proper moment for achieving the cure by other means.

Case 3. Countess C. from Paris, aetat. 28, a strong healthy looking lady, had suffered for a long time from a fixed rheumatic pain in both her knees, which had come on slowly, and had gradually increased. Having gone through various treatments without experiencing any relief, she came to Aix-la-Chapelle, and began a course of the waters July the 20th 1854. Though she drank them regularly and in large doses, and took a great many baths, several douches and a few vapour-baths included, the treatment did not seem to make any impression on her. When I called Sept. 9th, I perceived no change whatever, and was informed that she suffered quite as much as before. On my next visit on the 12th she told me that she had felt a little lassitude during the last two days, and had perceived a slight shivering on the 10th in the afternoon, but that this sensation had since left her, and that, with the exception of the usual pain in her knees, she felt quite well again. A somewhat contracted pulse was the only unusual symptom I perceived. I expressed my regret not to have seen her on the day when she had

felt unwell, as I was of opinion, that those symptoms had indicated a reaction, which might have been turned into advantage by properly attending to it. The patient was very sorry on hearing this, and expressed her willingness to submit to any treatment which I should think proper to prescribe in order to promote a salutary febrile reaction. In consequence of this I advised her to confine herself to her bed, to cover herself warmly, to take plenty of hot drink, and prescribed a strong sudorific draught. — The next morning I found her with a full, strong and quick pulse, and in profuse perspiration. The treatment was continued, and the patient was kept in bed for four days longer. The profuse perspiration lasted for two days, and then the sweat gradually diminished. When the patient left her bed, she was perfectly free from pain. Not being more in need of the waters, she left Aix-la-Chapelle Sept. the 23^d in perfect health, and continued well up to June 1860, when I last heard from her.

This case is apt to interest from various reasons; it shows first, how almost imperceptibly a salutary reaction can come on, secondly, how important it is to pay attention to the minutest symptoms which may indicate a change, thirdly, what benefit may be derived by choosing the right moment to change the treatment. The patient had been under excellent medical advice, and had taken repeatedly sudorific medicines previously to her coming here, without being benefitted by them, but she was cured when taking them at the opportune moment.

After-effect of the waters.

The action of the waters upon the system is sometimes so very slow, that their effects are imperceptible at first, and only become apparent, sooner or later, after the patients have left. There are many instances of persons, who left this place in the full belief of not having derived any benefit from the waters, or of being even the worse from their use, being agreeably surprised, a few weeks afterwards, by a sudden change for the better, or by perceiving the first beginning of a gradual improvement.

It may be said of almost all active mineral springs, that their use is more or less frequently followed by such

an event, known under the name of „after-effect.“ Nevertheless, when examining the monographs or manuals written on mineral springs, we find but very little which is apt to give us an idea of the nature of such an after-effect. Having had frequent opportunities to become acquainted with it, I may be permitted to devote a few pages to this subject, which is far from being so well understood and appreciated, as it deserves.

Some diseases are of so long standing, and are so deeply rooted, that a long time is required before the waters can make such an impression upon the system, as to give a retrogressive direction to the march of the disease. The change, when beginning at last, not being at first marked by striking symptoms, very often escapes the notice of the patient, and the improvement is not perceived until it has made some further progress. The patient leaves the watering place discontented with the springs, but as the metamorphosis of the disease, when once begun, continues to develop itself more and more after his departure, he at last becomes aware of the improved state of his health.

Among the visitors of the Aix-la-Chapelle springs, there are a great many whose sufferings originate from a disturbance of some secretion. Such patients only find relief from the waters when their use restores the secretion to its normal state. This once being in good order, the disease will begin mending, though some time may pass before the improvement is perceived by the patient. A person, for instance, who through checked perspiration is affected with rheumatism or muscular atrophy, will quickly discover an increased perspiration, especially when his skin has been dry and rough before, but this change does not appear at all important to him, as long as his sufferings continue to be the same. But the secretion once restored, is not disturbed by the patient's departure, and sooner or later, will exercise a beneficial influence upon an ailment originally brought on by checked perspiration.

With other patients, the course of waters brings on a general excitement which prevents them from perceiving their improvement; but as soon as they cease using the waters, they become free from excitement and find themselves better.

In other cases, the cure is already effected before the patient leaves, but some new pain, caused by the treatment, prevents his perceiving his improved state. When speaking of the effects of the douches, I mentioned how beneficially they sometimes acted, when applied as a counter-irritant. This counter-irritation now and then brings on pain, which to the patient worried by long sufferings, appears quite as bad as his original malady, though it widely differs from it both in its seat and intensity. In cases of sciatica, for instance, when treated with strong douches, the patients, frequently, are unable to distinguish the obtuse superficial pain of the cutaneous integument from the violent pain, seated in the nerve. Though the latter is already diminished, nevertheless, the patient, tormented by an excessive sensibility of the skin, goes on complaining of violent pain; he leaves the place satisfied of the inefficacy of its waters, but congratulates himself on the erroneousness of his opinion afterwards, when the hyperaesthesia of the skin gradually diminishes after ceasing the douches.

By what I understood from professional friends, who attended patients after their return from the Aix-la-Chapelle springs, now and then, a febrile reaction is observed, which is followed by a good crisis under copious sweats, or increased urinary secretion, or diarrhoeas.

Case 4. Mr. D., a Scotch gentleman, aetat. 58, came to Aix-la-Chapelle in Sept. 1851, to take the waters for chronic rheumatism. He suffered from shooting pains in his legs and arms, his ancles were swollen, and he had a swelling of the size and shape of a large walnut at the lower extremity of the semi-membranous muscle. This tumour had been the seat of intense pain before, and was very tender still. Its hardness was such as is generally met with in rheumatic swellings. After a course

of three weeks, during which he had been drinking the waters and bathing, (plain baths and douche-baths) he was obliged, by some family concerns, to leave. He had perspired freely during his course, and his pain was greatly diminished when he left, but the swellings were quite the same as on the day of his arrival. I had an opportunity of seeing this patient in April 1852 in Scotland, and found him free from pain and all swellings. I was informed by him, that the increased perspiration had lasted for some time after his departure. He had taken great care not to check it, and the swellings had gradually lessened and ultimately disappeared.

Case 5. Mr. E., aetat. 40, a captain in the English East Indian army, left India in 1837 and arrived in England in the latter part of the year. He had been there scarcely a few weeks, when he was seized with violent sciatica. After having gone through various treatments without experiencing any improvement, he was advised by one of the physicians he consulted, to take a course of baths at one of the warm spas in southern Germany for three seasons following, and to pass the winters in Italy. Captain E. conscientiously followed this advice, took the waters at the appointed place in 1838, 39 and 40 and passed the winters in Italy, but finding no alleviation, he came to Aix-la-Chapelle in 1841. His sufferings were great; his left leg which was the seat of the neuralgy, was greatly diminished in size; and he walked with difficulty. He was advised to drink the waters and to take baths, especially douche-baths. This treatment, which was once interrupted for a few days by an intestinal catarrh, was followed up for ten weeks; but the patient felt no relief, and pretended, on the contrary, that the pain had increased in the latter part of his course. He left Aix-la-Chapelle despairing of his recovery, and when I stated my opinion that he would feel better soon afterwards, he replied rather angrily, that this promise had been given him too often already, to put faith in it any more. But my prophecy was realised, for one of the first patients I saw in 1842 was Capt. E., whose appearance was so much improved, that there was some difficulty in recognizing him. I understood that, a little while after he had left last year, he had perceived an improvement gradually coming on, which constantly went on progressing till he felt perfectly well, about a month after his departure. He had passed the winter in Greece, and though when being out shooting, which he frequently did, he had exposed himself to all the vicissitudes of the weather, and several times had been wet through, he had no relapse. Being perfectly well now, he had only come to Aix-la-Chapelle to take the waters as a preservative, and because he wished to accompany a friend, a fellow martyr of sciatica, whom he recommended to my care.

I might cite several other instances of after-effect, but I consider these two sufficient, the more so, as the reader will find two others recorded lower down (S. Case 14 and 16).

On the choice to be made between the various modes of employing the waters.

The waters, of the effects of which I have just been trying to give a description, can be expected to be beneficial only, when employed in a rational way. An absolute rule in therapeuticks, enjoins to base the plan of the treatment upon the individual state of the patient, and there is no reason, why an exception to this rule should be made in regard to patients coming to a watering place in search of health. Thus, their medical guide can only determine on a plan of treatment, after having thoroughly examined their cases in all their details. By varying the way of employing the waters according to the state of his patients, the medical attendant will be enabled to derive the greatest possible benefit from them. A patient, for instance, who has but recently contracted a chronic rheumatism or a neuralgy from the effects of a cold, may be cured by directing the treatment against the cause of the complaint, the checked perspiration, and if his constitution permits it, we may, in addition to the internal use, prescribe him repeated vapour-baths in order to re-establish perspiration. But, if these complaints are of too long a standing, we can hardly expect to cure them by forcing perspiration, and ought rather to direct our attention to the present state of the patient. We have to soothe a pain on the surface by plain baths or by applying the douches in a mild form; while we try to remove a contracture by strong douches combined with vigorous champooing. To soften indurations, we have recourse to long bathing, whereas we may deem short baths sufficient, where there is but an increase of nervous sensibility. I forbear detailing further the

modifications which may be made in the treatment, as I shall have occasion to recur to this subject in the following chapter.

On the length of time, required for a course of waters.

There is scarcely one patient, who when arriving here, does not ask his medical attendant, how long a course lasts. It is but natural, that patients, who for the sake of their health have been obliged to leave their homes, should like to know how long they are to be kept from those who are dear to them, or from concerns, which are likely to suffer from a long absence. But professional men, when sending their patients to a watering place, should not fix a certain period as the proper or sufficient time for their cure. When prescribing a medicine, we watch its effect upon the constitution, we notice how it is borne by the patient, and what change takes place in the malady. In accordance with the result of our observation, we either continue or suspend the medicine for a little while, or we leave it off altogether; but we never tell our patients beforehand, how long they have to go through the treatment, and, how long they are to use the same medicine. There is no reason why it should be otherwise with a mineral water. It is equally impossible to fix a certain time for a course of waters, and amongst the cases recorded in this treatise, the reader will find some which were cured in a comparatively short time, whilst others necessitated a longer stay. If a patient who is affected with a complaint, which by experience we know to be curable by these waters, bears the treatment well, he ought to go on with it as long as a favourable result can be expected, and he ought to be the more persevering, when he perceives that a change for the better has already taken place. On the contrary, if no benefit has been derived from this treatment, though it has been continued for a length of time, which in similar cases was sufficient to effect a cure, if symptoms

appear which counter-indicate the further use of the waters, or if the system appears saturated with them, it will be prudent to suspend the use of the waters, or to leave them off altogether. If after a longer or shorter pause, a beneficial result from the treatment becomes more apparent, a second course may be followed, if necessary.

CHAPTER III.

On the diseases which indicate the use of the Aix-la-Chapelle sulphureous waters.

The reader must not expect to find here a complete list of all the diseases, for which the author or his contemporary colleagues at this place or their predecessors ever employed these mineral waters. Only wishing to give the reader a correct idea of the peculiarities of these springs, so as to enable him to see in what respect they differ from other renowned mineral waters, I forbear giving a long catalogue of all the diseases which may be benefitted by their use, and, thinking it better to mention such complaints alone, in which their efficacy, I am convinced, is at least quite as great as that of any other mineral spring, I omit all ailments which, though they may have been cured here now and then, might have been more quickly cured at another watering place.

1. Rheumatism.

In rheumatism, as long as it is in its *acute* period, especially as long as the patients are not free from fever, the Aix-la-Chapelle waters are injurious. On the other hand, there is scarcely any form of chronic rheumatism or lesions arising from it, which is not benefitted by their judicious employ. Rheumatic pain as well as swellings and, if not too far gone, contractures and muscular atrophy,

consequent on it, are equally benefitted by them, and the only morbid conditions, in which they are of no avail, are those in which every other medical treatment fails likewise, viz. atrophy of the cartilages and of the epiphyses of the bones. I obtained the greatest success from their use in swellings of the ligaments, muscles, sinews and of the periosteum as well as in deposits in the intramuscular tissue. Rheumatic pain, whether it had affected ligaments or muscles, or whether it was lodged in sinews or in serous membranes, has been successfully treated. After the explanation already given on the various modes of employing the waters, the reader will not be surprised at the result obtained by the same medicine in cases which, though arising from the same cause, differed so much from each other, as well in outward appearance as in their intensity and the length of their duration. Some of the patients drank the waters and took baths, others took douche- and vapour-baths besides the plain sulphureous baths, whilst others only bathed, and did not drink the waters at all.

Case 6. F., aetat. 14, from Marseilles, the son of healthy parents, who came here with him in the summer of 1852, had enjoyed good health when a child. When twelve years old, he first had an attack of acute rheumatism, which recurred several times later, and attacked his heart. On his arrival at Aix-la-Chapelle, July 24th, he still suffered from rheumatic pain in the sixth intercostal space on the left side. Symptoms of hypertrophy of the left ventricle of the heart were present. His digestive organs were in good order, his appetite excellent, and he was free from fever. He appeared delicate and plethoric. I advised him to take baths of 92 degrees, of fifteen minutes at first; and directed him to observe a mild-nourishing diet and avoid all exciting food or drink. — August 3^d, I found him feverish with some rheumatic pain in his left shoulder. The intercostal pain had not increased. The use of the baths suspended; antiphlogistic diet, rest. Foot-baths with nitro-muriatic acid, once a day. Warm infusion of *flores tiliae*. — After a few days rest, marked by increased perspiration, his state was improved, the pain in the shoulder was entirely gone, the intercostal pain diminished, and the fever had ceased. — He began taking baths again August 9th, and continued them up to the 20th. By this time he had become gradually free from his intercostal pain, and when

he left on the 21st he felt perfectly free from rheumatism. The hypertrophy of the heart, naturally, had remained unchanged. — I saw him again July 13th 1853, when he came back for a second course. Having remained perfectly free from rheumatism, he had gained strength and looked very well. The hypertrophy of the left ventricle was lessened, and was not marked by any other symptoms but those which appeared on physical examination. This favourable state continued during his second course, which lasted up to August 4th, when he left.

In this case the delicate state of the patient, and the affection of the heart, did not allow of the waters being employed otherwise than in the form of plain baths, still he derived all the benefit possible, in a comparatively short time. This case is also remarkable in so far, as it forms a striking contrast to case 3, for in that instance no effect was visible from a course of waters prosecuted with all energy for fifty days, whilst, in the present instance, a few plain baths of sulphureous water were sufficient to promote a salutary crisis.

Other patients in which the rheumatism was of a longer date and more deeply rooted, required a repeated use of the waters during several consecutive years, before a complete cure was effected; and sometimes in a following year, I was obliged to submit the patient to a treatment quite different from that observed in the preceding year.

Case 7. Mr. G., a London merchant, aetat. 40, had been a martyr to rheumatism for many years. It had come on slowly and had gradually gained ground. When he arrived here August 24th 1843, he was suffering from flying pains all over his body, which were especially violent at night and prevented sleep. Almost all the joints of the hands and fingers were more or less swollen and painful. Both knees were likewise swollen, and the patient being unable to take sufficient exercise, the muscles of the lower limbs had become greatly emaciated. No fever; the digestive organs in good order; no symptoms of disease of the heart. — In this case, the first indication was to relieve the rheumatic pain and to reduce the swellings. The internal use of the waters and plain and vapour-baths were followed by success, and the patient left Aix-la-Chapelle after a stay of six weeks, his pain greatly relieved and the swellings reduced in size. The muscles of the legs had remained in the same state, and the patient had no greater facility in walking. — He

came back in June 1844. He had suffered less pain during the winter. I found his muscles a little stronger, and his walk a little easier, than when he left in the preceding year; the swellings on his knees and those on his hands and fingers were a little diminished, but tender still. During his four weeks' stay plain and vapour-baths made the swellings almost entirely disappear. In the following year, 1845, he again visited Aix, almost entirely free from pain, but some slight traces of his swellings remained and the muscles were still very weak. This time he took only plain and douche-baths, and was completely cured by a course of four weeks. Towards the end of his stay, he could walk from three to four miles without difficulty. He continued in a favourable state, as I had the opportunity of observing in the next following years, for, though the patient felt perfectly well, he returned to Aix-la-Chapelle in 1846 and 47 to take the waters as a preservative. When being in London in April 1852, I called on him and found him in perfect good health.

In rheumatic swellings of the joints, when still painful, I prefer plain and vapour-baths, whilst when there is no pain, I have recourse to plain and douche-baths. The douche, applied on the swollen joints, seems to further resorption by stimulating the circulation. In such cases, it is sometimes advisable to let the patients remain somewhat longer in the bath, after the douche is done.

By stimulating the circulation in the cutaneous integuments, the douche probably makes the patients less sensitive to the influences of the atmosphere, and among the patients attended by me, there were not a few, who previously to their course of waters at Aix-la-Chapelle, had suffered more or less from rheumatism at every change of the weather but remained free from it since they took the douche-baths.

Case 8. The Duke of H., from France, aetat. 50, when returning a few years ago from a journey in the East, had an attack of articular rheumatism, which was cured very soon, but at longer or shorter intervals was followed by others. These fits were carefully treated, and left no traces in the joints, but the patient remained in a very debilitated state. After having been free a long time, a cold, which he caught in Sept. 184., brought on a new fit of rheumatism, which, this time, soon left the joints and fixed itself in the bladder. The pain and the difficulty of passing urine having yielded to a judicious and energetic treatment,

the patient and his medical attendants wished to put a stop to these frequent relapses by a preservative treatment, and so he came to Aix-la-Chapelle in June of the following year. Though of a nervous constitution, the patient declared he had been tolerably strong before his illness. Latterly, he had become very thin, had gained an unhealthy appearance, and complained of excessive nervous sensibility. The joints were neither swollen nor tender. Now and then, a shooting pain in the region of the bladder came on, but the excretion of urine went on without any difficulty. He drank the waters and took plain and douche-baths. The douche was chiefly directed to the spinal column, the perinaeum, the region of the bladder, and the legs. There was scarcely any change in the perspiration perceptible, but the secretion of urine was greatly increased during the course. The treatment was followed by the best success, for the patient not only lost the pain affecting the bladder, but had no return of his rheumatism after his departure from Aix-la-Chapelle, as I was informed but a short time ago.

Case 9. Mr. I. a French gentleman, aetat. 40, of a strong constitution, very much addicted to the pleasures of the table, caught a cold when out shooting in the winter of 1848, and had an attack of acute articular rheumatism, which kept him confined to his room for the greater part of the winter. After his ultimate recovery no traces of rheumatism were left, and the patient enjoyed good health for a long time. But in the next following winter, he had an equally severe attack, but which, after having lasted several weeks, disappeared leaving him in his usual state of health. But, though the patient felt himself quite well in the summer and autumn, his rheumatism returned every winter with the same intensity. After having thus suffered in the following winters of 1848, 49, 50, 51 and 52, he came to Aix-la-Chapelle in 1853 in order to undergo a preservative treatment. He looked strong and appeared to be in the enjoyment of perfect health. He first took plain baths, and afterwards a great many douches. After a stay of six weeks he left. The winter of 53 to 54 being, after many years, the first in which he was not troubled by rheumatism, he came back here in the summer of 1854 and took daily a douche-bath for four weeks. The following winter not being troubled by rheumatism either, he returned likewise in 1855, and repeated his visit to Aix-la-Chapelle every year, 1858 included. In the winter of 58 to 59 he was also free from rheumatism, and he would have come to Aix-la-Chapelle in the summer of 59, if it had not been for the then prevalent animosity of a part of the German press against France, which made Mr. I., like many of his countrymen think, that a Frenchman could not travel in Germany without running the risk of being insulted. Thus for the first time in the course of six years he did not make his usual trip

to Aix-la-Chapelle. But suffering from rheumatism again, though slightly, in the winter of 59 to 60, he came back to Aix-la-Chapelle in 1860, and, having remained free from rheumatism in the following winter, also in 1861.

Chronic diseases of the eyes of rheumatic origin, frequently yield to the use of these waters. Out of the cases of this sort which were under my care, the following is one of those most worthy of notice.

Case 10. Mr. K., aetat. 43, an auctioneer in a small Westphalian town, had frequently exposed himself to cold, and had contracted a rheumatism, which at last affected his eyes. Notwithstanding a very active treatment, the inflammation of the eyes became chronic, and, finally, the patient was sent to Aix-la-Chapelle, where he arrived August the 2^d 1850. The inflammation on the right eye was but slight. In the left eye, the anterior ciliar vessels were dilated, the interior ring of the iris discoloured, and a small whitish filament, adhering to the iris, appeared behind the pupil. The pupil on the left eye was more contracted than that of the right. In sunshine the patient saw almost nothing with his left eye, whilst in cloudy weather he could distinguish objects of larger dimensions. The patient's general health was not impaired; his digestion was good, his pulse was rather too full and hard. I began the treatment by having the patient cupped on his back and by aperient medicines, in order to diminish the determinations of blood to the eyes. Four days after his arrival the patient began drinking and bathing. As it was important to increase perspiration, vapour-baths were frequently resorted to. Strict antiphlogistic diet was observed. Now and then a dose of sulphate of soda was taken with the mineral water. This treatment was borne very well, and no determination of blood to the head was observed. The redness in the eye and the discoloration of the iris gradually disappeared in the first fortnight, and in the fourth week I could even perceive that the filament began to diminish. When he left after a six weeks' stay, this morbid product had completely disappeared, and of the whole malady only some little weakness of the sight and a slight photophobia remained. Happening to pass through his town in March 1851, I called on him, and had the pleasure to find him in good health and his eyes quite sound.

2. Gout.

During the first ten years of my practice at Aix-la-Chapelle the efficacy of the springs in gout appeared to

me very doubtful, and I made no secret of this opinion a that time*). But I have since then learned from further experience that gouty people may be cured by the waters, provided they persevere in their course and conform afterwards to a regular way of living. It is not at all astonishing that persons with a hereditary disposition to gout who have not yet experienced any attack of it, should remain free from gout when they take the waters in time; but my opinion of their effects in gout is not founded on such cases. I have been induced to a belief in their efficacy by several instances, in which patients who had long been subject to gout had, after a course of waters, remained free from it for several years, a fact which I succeeded in ascertaining by frequent information, obtained from patients whom I had attended at different times.

Swellings of the joints and slight contractures have been observed by me to yield to the waters, and two cases have come under my notice in which even calcareous deposits, to be sure of small dimensions, disappeared. An excess of uric acid generally passed off very quickly. The springs were likewise of great avail in irregular gout.

In anomalous gout, the method of using the waters differed from the manner of their use in regular gout. In the latter, I generally preferred the baths to the internal use of the water, whereas in the former, the drinking of the water appeared to me the most important, as being most apt to determine regular fits of gout. The following case of anomalous gout is too interesting not to be recorded.

Case 11. L., a German gentleman, aetat. 40, a tall thin man, without any apparent sign of a disposition to gout, but in whose family gout was hereditary, had constantly enjoyed good health when young.

*) Description of the mineral waters of Aix-la-Chapelle etc. London 1842. p. 33.

Two years ago having taken a cold, he got an acute bronchial catarrh which, notwithstanding the good treatment of his doctor, and the great care of the patient became chronic, and was afterwards accompanied by asthmatic fits. After having vainly attempted for a longer time to effect a cure, it occurred to his physician, that these asthmatic fits might originate from gout. This opinion was founded upon the repeated observation, that, before the fits, the urine was always pale and almost colourless whereas, after the fits, it was dark and contained a great quantity of uric acid. In consequence of the opinion, thus formed, the Aix-la-Chapelle springs were recommended. Just before his arrival, June 25th 1849, the patient had a new fit of asthma, which had detained him a few days in a neighbouring town. The urine was full of uric acid. Mucous rhonchus. Voice and percussion normal. Cough rather violent. Thick bronchial mucus was expectorated without difficulty. No fever; puls 70, a little weak. While walking, weakness and shortness of breath. Digestion, sleep excellent. He drank at first about 10 ounces of water, and, when doing well, the daily dose was gradually increased to about 2 pounds. The patient gained in strength. Cough and expectoration daily diminished. The urine had become clear in the first days of the course. — July the 10th lassitude, want of appetite, increased thirst, tongue slightly furred; bowels confined; pulse fuller than usual, 84. Saline aperient; rest; low diet. — The 11th. The patient had been awakened in the night by a pain in the right big toe. I found the toe swollen and slightly reddened on the metatarsal joint. The pain which, however, was far from violent, increased on touch. The cough was greatly diminished. The medicine had operated sufficiently. Pulse as on the day before. I directed the toe to be wrapped in flannel; diet continued. — The 12th. Swelling and pain the same, pulse 76: Thirst diminished; tongue cleaner. Urine full of uric acid; profuse perspiration. — July 13th. A somewhat liquid motion during the night. Increase of appetite. Swelling and pain less. Scarcely any cough. Chest perfectly free. — July 22^d, the patient was so far restored, as to be able to begin with the baths. He remained first 30 minutes in the bath; but gradually increased its duration to 45, which he continued until the time of his leaving, August 20th. He was then perfectly well. I saw this patient again in 1855, when he passed through Aix-la-Chapelle, and understood from him, that he had been perfectly free from asthma since 1849, though he had suffered several times from bronchial catarrh. Now and then he had felt a slight pain in his feet, but as it had lasted only two or three days and had gone off either by itself or after a few drops of tincture of colchicum, he took little notice of it; on the contrary, the pain he assured me often was welcome to him, as he considered it as a guarantee against the return of his asthma.

I have, now and then, seen chronic inflammations of the eyes originating from anomalous gout, disappear under the use of the springs. In the case of a patient, who was cured here, the anomalous gout which was complicated with haemorrhoids, had, now and then shown symptoms, which for some time had led several physicians to suspect an organic disease of the heart.

3. Paralysis, Affections of the spinal cord, Anaesthesia.

The Aix-la-Chapelle sulphureous springs have been frequently recommended in paralysis, but their use requires great discretion. Where there is a hemiplegia, arising from softening or a haemorrhage in the brain, their use can bring on congestions which, by provoking a new fit of apoplexy, may endanger the life of the patient. Nevertheless, the springs are used with advantage in paralysis, even when arising from an affection of the central organ, when this affection has ceased to exist, or when it has been occasioned by anaemia. In peripheric paralysis, especially when engendered by rheumatism or by metallic poison, the springs have a decided salutary action.

They can be used both externally and internally in rheumatic and metallic paralysis, as well as in paralysis caused by hysteria or anaemia. In all other forms, the external use, in the shape of plain and of douche-baths, is preferable. Though it is greatly desirable to strengthen the paralysed parts, great care is to be taken not to excite too much the nervous and vascular systems. The greatest precaution should be observed in each case, and the least change in the circulation should be noticed; for only by acting thus, one can expect to obtain good results from the use of the springs in paralysis. I have found them most efficient in paralysis of the facial nerves, in paralysis affecting one arm only, and in paraplegia. In most cases of the two first categories, in which a cure was effected, the complaint was of peripheric origin. When

mentioning here successes obtained by the use of the springs in paraplegia, it must not be inferred that I intend recommending the springs in far advanced chronic diseases of the spinal cord; for I only wish it to be understood, that, several times, I had reason to congratulate myself on the good results obtained in cases of not very long standing. The fear of being suspected of having committed an error in diagnosis, would prevent me from mentioning this, if I were not fully satisfied of the accuracy of my observations. The two following cases, probably, will not permit of any misinterpretation.

Case 12. Mr. M, aetat. 54, a manufacturer living at Aix-la-Chapelle, a tall thin man, the father of a numerous family, of a hereditary disposition to consumption, had almost constantly enjoyed good health, in spite of the evil influence of excessive mental and bodily exertion on a weak constitution. In May 1846 he first perceived a numbness in his feet. This gradually increased, and about a month afterwards, he felt so lame that he could not walk for more than ten minutes. When examining him, I did not find any other symptoms of spinal disease than the numbness in his feet, nor did he complain of anything but his lameness. I prescribed the internal use of the waters, and plain and douche-baths. After twelve plain baths and an equal number of douches, he was quite well, did not perceive any weakness, and could walk from two to three miles. — This state of perfect health continued up to June of the next following year 1847, when the same numbness reappeared. I gave him the same advice as the year before, but he delayed the use of the springs from day to day, and only when feeling very much worse, he began with it at the end of July. This time, neither this nor any other treatment through which he went had any influence upon the disease, which made such rapid progress, that in December of the same year the upper, as well as the lower extremities and the trunk, were completely paralysed. The patient went on declining rapidly, and died in the last days of the year. The section was not allowed. This rapid march of a disease, which generally makes but slow progress, was equally surprising to me as to two of my colleagues, who attended him with me. But when it became known afterwards, that the patient, who had generally been considered to be in good circumstances, was, long before his death, a ruined man, and that he had been in constant anxiety about his situation, we could more easily account for his rapid decline.

Case 13. Mr. N., aetat. 40, a strong looking Scotch gentleman, arrived here August 19th 1852. He had constantly enjoyed good health, when in May 1851 he first perceived a weakness in his legs. I found their motility as well as their sensibility greatly altered. When walking he could not distinguish whether his feet touched on a carpet or on a board. When trying to walk with his eyes shut, he was in danger of falling. There was incontinence of urine. His appetite was good and his bowels acted regularly, though the alvine evacuation was not effected without difficulty. The patient's state was greatly improved by drinking the water and taking plain and douche-baths. On Sept. 27th, when he left, the involuntary emission of urine had ceased; the patient walked with greater facility and could even shut his eyes when walking, without being in danger of falling. But there still remained some lameness, which did not permit of his walking more than a mile, and even this little exercise was very fatiguing. This patient came back to Aix-la-Chapelle in 1853, 54 and 55. Since his departure in 1852 up to his leaving in 55, when I saw him last, his state had continued to be the same. The lameness of the legs had remained unchanged, though the other symptoms of spinal affection, mentioned as having been present before, were not observed any more.

These two cases prove that chronic diseases of the spinal cord can be arrested in their progress and, even cured by the Aix-la-Chapelle waters. The first patient enjoyed good health for a whole year after his first course. Although it is to be regretted that the second course was not followed by the same result, the fatal termination of the disease leaves, at least, no doubt about the accuracy of the diagnosis. Those patients, whom I was fortunate enough to cure of diseases of the spinal cord by the waters, were certainly not affected with a softening or an atrophy, but could only be supposed to suffer from chronic meningitis or myelitis, not very advanced. Where the disease is of long standing, and has made great progress, our springs are quite as inefficacious as every other treatment. But there is an exception to be made in favour of those who are paralysed in consequence of metallic poison. I have seen patients of this kind perfectly recover, though all the symptoms of a far advanced disease of the spinal cord were present; there was, however, reason to doubt,

whether the cord itself was affected, or, which I consider more probable, the seat of the disease was in the membranes of the cord, or the vertebral column, or the spinal nerves.

From what has just been said about the effects of the springs in paralysis, one may be tempted to expect the same result from their use in *anaesthesia*. Though I think that the springs may possibly exercise the same salutary influence upon this affection, I have seen but too few cases of it, to be entitled to pronounce a positive opinion on this head; for my experience is limited to one case of complete anaesthesia of the olfactory and gustatory nerves, to three others of anaesthesia of the trigeminal nerve on one side, and to one case of anaesthesia of the leg. In the first of these five patients the evil was so far gone, and appeared so complicated, that no good result could be expected. Out of the three patients suffering from anaesthesia of the trigeminal nerve two, in whom the affection seemed to be caused by rheumatism, were cured. The anaesthesia of the leg was observed by me, in 1860, in a patient who at the same time suffered from syphilitic psoriasis. Though the latter was cured, the anaesthesia, which, in all probability, was brought on by syphilis also, resisted the treatment.

4. Progressive muscular atrophy.

There is no disease in which the tonic virtues of these springs are more apparent, than in progressive muscular atrophy. When this ailment, now about twelve years ago, began to attract the attention of the profession, electricity, which had been brought into favour chiefly by Mr. Aran and Mr. Duchenne, was the only remedy which was resorted to. But there are but few cases on record that have been cured by it. When, therefore, in 1856, I recorded the cases observed by me up to that

time*), there was not one of the continental or English reviews, which made mention of my little book, to which the paper on atrophy, contained therein, was not very welcome, and several of the best reputed compendiums on balneology, which appeared afterwards, viz. *Helfft*, *Seegen*, *Durand-Fardel*, *Rotureau* gave an extract of my observations. The favourable reception my little treatise met with was probably owing to the circumstance, that by the observations which it contained the profession was first made acquainted with a remedy hitherto unknown in progressive muscular atrophy, viz. the Aix-la-Chapelle springs, which were proved to possess the virtue of *arresting progressive atrophy in its march, of restoring those muscles which have not been so long affected as to have already undergone fatty degeneration, and even to effect a perfect cure in cases where the disease is of a comparatively short standing.* These inferences, drawn from the cases attended by me up to 1856, have been confirmed by subsequent observations made by me in the following years. The efficacy of the Aix-la-Chapelle springs has become more and more evident to me, and would probably have appeared even more decided, if the cases, attended by me, had not been of the worst kind and of very old standing, if all patients had devoted the time absolutely necessary to their thermal treatment, and had followed a proper way of living after their departure from Aix-la-Chapelle.

Case 14. Mr. O., a German merchant, ætat. 40, arrived here July 30th 1850. His parents had been cousins. He always had been delicate though, with the exception of the last eight years, he had remained free from illness. He was married and had healthy children. The first symptoms of the disease had appeared eight years ago while taking a course of sea-bathing at the island of Helgoland. There, he said, he had first felt, in consequence of a cold, a debility in his hands,

*) *Traité pratique des propriétés curatives des eaux thermales sulfureuses d'Aix-la-Chapelle.* Bonn 1856. p. 36 ff.

which was soon afterwards followed by an emaciation of the hands and forearms with cramps in the affected muscles. The ailment made slow progress, but in the course of time attacked a great number of muscles. In spite of a variety of treatments, included the use of several renowned mineral springs, the disease was not arrested in its march, and gradually became worse and worse. At last he was sent to Aix-la-Chapelle. The patient was short, very thin, and of grey complexion. Notwithstanding the excessive heat which prevailed at that time, he always felt chilly and wore winterclothes. In order to warm a little his hands, which were icy cold, he almost constantly kept them in the furred pockets of his great coat. The fingers were emaciated, their knuckles prominent. The hand was kept in semiflexion. Their palms were deeply hollowed, and the sinews of the flexors, and the metacarpal bones could be felt through the skin in all their outlines. On the backs of the hands the intra-metacarpal spaces were not excavated. Of the impaired movements flexion was more free than extension, pronation not so difficult as supination. The forearms were emaciated on their back, the flexors flattened, underneath the skin their sinews could be felt hard like wires. Both deltoid muscles were flattened, the right more than the left. The right arm could not be raised to the height of a right angle. The intercostal spaces were deeply furrowed, and the ribs very prominent. The patient suffered from cramps in his arms, and in the deltoids, and in the intercostal muscles, where they were most violent. Respiration short; pulse feeble, but regular. The sounds of the heart feeble and only to be heard over a small surface. The skin was constantly dry, and felt like parchment. The legs were still free, but above the knees some brown spots were visible, which, as the patient pretended, wherever they had shown themselves before, had preceded an alteration of the subjacent muscles. The patient was in a wretched state; though the legs were still well, the difficulty of breathing prevented him from taking exercise and he could walk only very slowly. His sleep was disturbed as well by the difficulty of breathing, as by cramps in his arms and intercostal muscles. When tired from lying on one side he wished to turn on the other, he required the assistance of his servant, being unable to turn by himself. Appetite was good, but his bowels costive. I ordered him to drink the waters, now and then with an aperient salt, and to take baths. Not finding himself comfortable in a bath below 102 degrees, he took them at this temperature*). He felt very well while in the bath. His

*) At a watering place visited by him previously to his coming to Aix-la-Chapelle, his medical attendant had insisted upon 90 degrees. The patient had in such a bath always felt chilly, and not bearing the waters well, had been obliged to leave the place very soon.

skin being too dry to be easily influenced by the bath, I gradually increased its duration, so that finally he remained in it two hours. Four weeks passed without his course being disturbed by any incident, but the state of the patient remained constantly the same. Only one symptom which might have been regarded as indicating a change, was observed in the last three or four days of his stay — a slight fatty sweat on his forehead. When the patient wished to return home, I did not attempt to persuade him to stay longer, as I did not see any improvement, and did not know whether the springs would be of any avail in a disease in which neither I nor several of my colleagues, to whom I mentioned the case, had ever employed them. Thus the patient left after a month's stay, just in the same state in which he had arrived. I was not a little surprised to see him return in the following year 1851 in quite an altered state. He looked much better, and had lost his grey complexion. He was not so thin as the year before. The atrophy had left the intercostal muscles and the deltoids. The hands and forearms were still in the same state as the year before. Respiration had become easy. The skin, whose action had become normal, had gained a good temperature. The patient could take tolerably long walks without feeling tired. He informed me that a week or a fortnight after his departure, his skin had become softer and moister; at the same time he had felt an improvement in the atrophic muscles which had made constant progress. — The patient had returned to Aix-la-Chapelle to try once more the effects of the waters on those muscles which had not participated in the good results of the preceding course. But neither this second course in 1851, nor a third one in 1852, brought on a change in the atrophic muscles of the hands and forearms. The muscles which had been cured by the first treatment, remained free from atrophy.

Case 15. Mrs. P., sister of the patient just mentioned, had felt the first symptoms of progressive muscular atrophy nine years before at the same time with her brother while staying at the island of Helgoland. Like him, she attributed the origin of her sufferings to a cold caught at that time. In spite of all treatment, the disease had made constant progress during its nine years duration. In the latter years, the patient had even lost the use of her lower limbs. When having passed the whole day sitting in an armchair, she was obliged to be lifted into bed. Occasionally, fits of bloodspitting came on, and the patient suffered from palpitations of the heart. She had long given up all hope of improvement, when the effects of the Aix-la-Chapelle waters on her brother, gave her new courage. Though her medical attendants did not approve of her intended journey to Aix-la-Chapelle, they, at last, yielded to the ardent desire of the patient. She arrived here May 20th 1851. The

patient, then 37 years old, had the appearance of a person of sixty, so much her looks were altered by long sufferings. Her face was emaciated, her complexion of a yellow hue. On the emaciated neck there were hollows formed by the atrophy of the digastrii and mylo-hyoidei. The antagonists of these muscles being free from atrophy, the mouth could be but incompletely opened. The intercostal spaces were deeply excavated. Her head was almost constantly bent and the shoulders elevated, as it is generally the case with persons who, suffering from short breath, seek relief in this position. The extensors of both hands were emaciated. The intra-metacarpal spaces were deeply furrowed. The fingers of both hands formed what is termed the „griffins-hand“; in some of them the third phalanges were extended, while the hand and the other phalanges were in a state of half flexion. The palms were a little flattened; both hypothenar eminences almost entirely wasted. The thenar eminences were in a tolerably good state. The muscles of the right thumb and index being free, the patient was still able to do a little needlework. The sounds of the heart were weak and only heard over a small surface. The lungs were found healthy on physical examination. The skin on the legs was very pale and cold, the muscles offered little resistance when touched, and the extensors as well as the flexors, appeared soft. The morbid state of the legs was not so far advanced, as they had become affected later. The disease, which had first shown itself in the hands, was most developed in the extensors of the hands, less in the intercostal muscles, and a little less still on the neck. On the legs, the atrophy had made no great progress, and its presence in the heart could only be suspected. The patient complained of cramps in nearly all the atrophic muscles. Where the disease was most advanced, she suffered little or nothing at all. Appetite good, digestion, in general, good. The patient had been married a long time, her children were healthy, even the youngest of them, a girl born six years ago during the illness of her mother. — The patient began with a bath of 30 minutes of about a 100 degr. F., but, she assuring me that for years she had never felt so well, so perfectly free from pain, from palpitations and difficulty of breathing, as during the half hour of her bath, its duration was gradually increased to two hours. I did not prescribe the internal use of the water. She had continued her course from May the 21st up to June the 8th, when a violent fit of bloodspitting came on. Fortunately it soon ceased after a few doses of acetate of lead with morphia, and the patient could begin with the baths again. — Her state had been going on visibly improving since her first baths. The temperature of the legs had become more normal, and those muscles in which the disease was not so far advanced, showed a greater elasticity. Under these circumstances I hit upon the idea of letting the patient make use of crutches. I hoped

that they would assist the legs in bearing the weight of the body, that by fixing the shoulders they would render respiration easier, and that, at all events, they would help to straighten the body. The legs whose debility might be owing as well to want of exercise as to the disease itself, might, I hoped, be thus enabled, to obtain some movement and gain strength. I met with great opposition on the part of the patient, who had a great antipathy to these instruments, but she yielded at last, and when she first tried them, June 20th — a month after her arrival — and found that the muscles of her legs had gained so much in strength as to enable her to walk a few paces with crutches, her joy knew scarcely any bounds. She went on bathing, and practised walking with crutches. The improvement increased daily. An oedema of the feet and legs, brought on by her pedestrian exercises, soon yielded to a compression with a flannel bandage; the soles of her feet, which had not trod upon ground for years, became inflamed through the unwonted irritation, which incommoded the patient for several days, but these trifles excepted, her general health continued to be good. On her departure, August 5th, the disease had left the intercostal muscles and the affected muscles of the neck. The patient could open her mouth without difficulty. The legs had gained so much strength, that the patient could walk, with crutches, for 15 minutes. When in her room she could even walk for some moments without crutches. She held herself almost erect. The thorax was enlarged, respiration free. The muscular cramps had ceased. Sleep was sound. The skin had a normal temperature. The sounds of the heart had gained in extent and intensity. The pulse had become stronger. The extensors of the hands and the flexors of the hypothenar eminences, were the only muscles which had not been benefited by the treatment. It is worth mentioning that during the whole time of the treatment neither perspiration nor the secretion of urine had been perceptibly increased. — This lady returned to Aix-la-Chapelle in 1852. She had not lost what she had gained by her course of the preceding year, but from not having practised enough walking with crutches, she had made no progress in walking since her departure. Her health was greatly improved. She had become much stronger; circulation was good. This time I neither prescribed so warm nor so long baths. After a two month's stay Mrs. P. left Aix-la-Chapelle in good health. She could take short walks without crutches, but I advised her to continue taking exercise with crutches. All the muscles which had been atrophied before, were sound, except those on the forearms and hands, in which not the slightest improvement had taken place.

Case 16. Mr. Q., captain in the British army, aet. 50, arrived here June 19th 1853 (not July, as erroneously stated in the above cited book). He

had constantly led a very regular life, and had enjoyed good health, till 1846, when he fell ill of the typhus. The convalescence was slow. Since that time he was subject to catarrhs of the stomach, which frequently returned, and always left a great debility behind. Having made a great exertion with his hands, two years ago, to protect his wife from a danger threatening her, he afterwards remarked a weakness in his right hand, which made it difficult for him to hold his pen. Soon afterwards he perceived the same debility in his left hand. An alteration of the motility and sensibility of the hands and forearms followed. Cramps and jerks in both forearms came on. An emaciation of the flexors had been already observed for some time. I too, noticed in these muscles the greatest emaciation. The pronators and supinators were less emaciated. The palms were both deeply excavated, and through the skin the sinews of the flexors and the outlines of the metacarpal bones were clearly perceptible. The thenar and hypothenar eminences were flattened; the intra-metacarpal spaces were deeply furrowed. The palmar sides of the fingers were flattened. The movements of the hands were imperfect. It required great effort on the part of the patient to sign his name. There were no symptoms of a spinal affection. An organic disease of the abdominal organs could not be discovered, but a catarrh of the stomach was present, which was attributed to the fatigues of the journey. The tongue was furred; the taste bitter. No appetite. Constipation of the bowels. General lassitude. Pulse frequent and feeble. The affection of the stomach being subdued, I began with plain baths, through which he felt very refreshed. The patient being very nervous, and not strong, and the skin being more active than in the two preceding cases, I prescribed baths but of 93 to 95 degrees F. and of 20 to 30 minutes duration. At pretty long intervals, doses were tried, but were soon left off, as they seemed to excite him. I also tried to make him drink the waters, but the patient showing a great antipathy to them, I abstained from it, from fear to disturb his digestion. Captain Q. went on bathing up to August the 5th. The course was twice interrupted by a slight fit of indigestion, but a strict diet and mild aperients alternating with tonics, soon freed him from it. When he left, the atrophic muscles were improved though but very slightly. The patient felt better and stronger. I prescribed a stimulating embrocation to be applied to the affected parts, advised him to take, now and then, a small dose of tincture of rhubarb, and to take nourishing and easily digestible food. I happened to meet the patient at Paris in April 1854, and had the pleasure to find him much better. The muscles of both hands had become much stronger, and he could use them with greater facility. In August 1855 I received from him a very legibly written letter, which he declared to be an autograph, in which he informed me of his perfect recovery. Two years

afterwards, 1857, I was again informed, by a friend of his, that he still continued doing well.

Case 17. Mr. R., aetat. 60, an English Gentleman, had almost always enjoyed good health, excepting that he was frequently troubled by nervous headache, to which he had been subject from his childhood. On account of this headache he was accustomed to take but little food, and to have frequent recourse to aperient medicines, which probably was the cause that, notwithstanding his good constitution, he always remained thin and looked delicate. In the severe winter of 1854 to 55 he felt himself greatly affected by the cold. In March 1855 he first perceived a debility and an emaciation in both hands. Soon afterwards he found some difficulty in keeping his head erect. When walking, in particular, the head inclined forwards in spite of all his exertions. When sitting he experienced less difficulty in keeping it straight. This dropping of the head often came on so suddenly, that he was afraid of being choked. The evil increased, and prevented him from walking. When consulted about his case, I advised the use of the Aix-la-Chapelle springs, and so he arrived here August 3^d 1855. The patient was tall, thin, looked pale and appeared to be very weak. The digestive organs in good order. Pulse slow and feeble. Skin cold, gums pale. The thenar and hypothenar eminences on both hands very flat. Through the emaciated palms the edges of the metacarpal bones could be felt. On the back of both hands the interossei were atrophic, and the spaces between the metacarpal bones deeply furrowed. All the muscles of the arms and forearms were thin, and had not the normal resistance. The disease, nevertheless, had made no great progress here, for all the movements could be effected, though some of them required some effort, and fatigued the patient very much. When writing, which he could only do with great difficulty, and but for a short time, his hand shook very much. The muscles of the back of the neck, especially the trapezii, were very thin. Whenever the patient tried to move, the head almost instantly inclined forwards, and he was obliged to sit down or put his hand to his head in order to raise it. The patient wore a very high and stiff stock to support the chin, but it answered the purpose but insufficiently. He suffered from cramps in the atrophic muscles. There were no symptoms of spinal affection. I prescribed animal food, and some glasses of good old claret to be taken daily. He drank 16 ounces of mineral water, took plain and douche-baths both combined with friction. The baths never lasted longer than from 20 to 30 minutes, and were 95 deg. F. In consideration of his great debility, I prescribed at the same time quinine in small doses. The treatment was modified according to circumstances. Whenever the pulse became fuller, the quinine, the

wine, and the inward use of the waters were stopped. When constipation came on, mild aperients or injections were resorted to. The chief object of the treatment was, in short, to strengthen the patient, without exciting him too much. Its effects were soon visible, for the patient had scarcely been under treatment three weeks, when the circulation became more active, the temperature of the skin increased, and the atrophic muscles gained some strength. September 24th, the day previous to his departure, his general health was excellent, the muscles of the neck were more voluminous, the flatness of the muscles of the thumbs and fifth fingers was diminished, the excavations between the metacarpal bones were filled up, the arms were more muscular, and the head could be kept upright for a longer time. Having twice already made the experience that progressive muscular atrophy, when once brought to a standstill, can go on improving after the close of the treatment, I did not try to retain the patient here any longer, as urgent family affairs called him back. As I heard afterwards, the patient did very well in the first time, and the improvement seemed to make progress up to March 1856, when a cold which he caught about that time, brought on, I do not know what fever which ended fatally in a few days. I regret not to have received any professional communication respecting him.

Case 18. Mr. U., lecturer on chemistry at one of the London hospitals, aet. 45, since childhood delicate and nervous, had frequently suffered from dyspepsy and intestinal catarrh. In consequence of long continued muscular exertion of the forearms and hands when writing and making experiments, two years before his arrival here, a debility of the hands combined with emaciation had come on. August 2^d 1856, when I first saw him, atrophy was evident in the external interossei and on both thenar and hypothenar eminences. I prescribed to the patient, who was very weak and nervous, nourishing and easily digestible food, moderate exercise in the open air, plain baths and small doses of the mineral water. This treatment was followed by signal success, for during five weeks such an improvement took place, that the disease was scarcely any more perceptible. The patient unfortunately was obliged to leave too soon, which was the more to be regretted, as assiduous occupation awaited him. In the first time after his arrival in London he felt perfectly well, but the nature of his occupation could not but be greatly detrimental to his health. Every morning after having hastily taken his breakfast, he went from his house, in one of the suburbs of London, by an omnibus to his laboratory at the hospital, made experiments and held lectures up to five o'clock in the afternoon, when he returned home to dinner, after which he frequently studied up to a late hour. In the middle of February 1857 he became dyspeptic and

going on, nevertheless with his professional avocations, his state became worse and worse. When hearing of my presence in London, towards the end of March, he wished that I should see him with his medical attendants. I found no trace left of the atrophy in his hands, and was told, that in the beginning of March he had suffered from an intestinal catarrh, which had soon been stopped, but that since then his digestion was greatly impaired, and he felt very weak. His tongue was slightly furred, appetite was deficient, the bowels were confined, the pulse feeble, the skin cool. The legs were in a state of paralysis. The bladder and rectum were free from paralysis. On examining the spine, no morbid lesion was recognisable. Though the patient was very thin, the emaciation was nowhere so preponderant as to be termed muscular atrophy. In my opinion the first thing to be done was to restore digestion, which object being attained, tonics might be resorted to afterwards. Being obliged to leave the following day, I could not see the patient again. I had not heard from him since that time, when he came to Aix-la-Chapelle in summer 1858. The atrophy had not returned, but the lameness in his legs still persisted, though by a tonic treatment it had latterly been greatly diminished. He could walk for several minutes in his room, though with some difficulty. The patient had, in the last eighteen months, frequently suffered from intestinal catarrh, and was anaemic in a high degree. I pass over the details of his present illness, thinking it sufficient to mention, that nothing indicated an organic disease of the spinal cord, and that under a general tonic treatment with moderate use of the springs, his walking was greatly improved during the two months of his stay. From here he went by my advice to Italy to pass the winter there. Since that time I have received no further news of him.

Case 19. Mr. T., formerly a captain in the British army, aetat. 43, a very strong man, had almost constantly enjoyed good general health. Thirteen years ago, he had made a fatiguing tour on snowshoes while in Canada, and felt soon afterwards a weakness in his right *gastrocnemii*, which later began to diminish in bulk. With time the slow progressing disease attacked the left *gastrocnemii*, both *recti femoris* and both *vasti externi* and *interni*. Muscular cramps had never been present, nor the general health of the patient impaired. After having gone through several treatments, the Aix-la-Chapelle waters were recommended to him by an eminent London physician, who had already witnessed their effects in muscular atrophy on the patient in case 16, whom he had also recommended to my care. He arrived here May 19th 1860. His general health could not be better. Notwithstanding the distinct atrophy of the mentioned muscles, the patient could walk short distances, with

the aid of a stick. The atrophy was most pronounced in the gastrocnemii, less in the vasti externi and interni and the recti femoris. In the upper extremities there was no atrophy. But the patient had perceived since about a month a certain debility in the thumb and index of the right hand, which especially attracted his notice when winding up his watch. He was advised to drink the waters, to take plain baths and strong douches, and to walk with crutches. The atrophic muscles were accurately measured every fortnight and the vasti as well as the recti were found constantly increasing. The former gradually became so bulky, that their increase of volume was striking at first sight. The weakness of the thumb and index disappeared. In the gastrocnemii no improvement was visible. — After eight weeks the patient left to live some weeks in the country. On his return I found the recti as well as the vasti externi and interni more voluminous than at the moment of his departure. He used the waters from September 3^d up to the 25th and passed the winter at Malaga. June 5th 1861 he arrived here again. The muscles which had been cured here the year before, the recti and vasti, had remained in the same favourable state. The gastrocnemii, which had been attacked first, now fourteen years ago, were not improved. This state was not altered by a month's treatment, nor were the gastrocnemii improved by a consecutive course at Wildbad as I ascertained by accurate measurement on his return from that place.

Besides the cases, just recorded, I observed three others, in only two of which the waters were used. In order not to extend this chapter too much, I shall mention them but briefly. The first, in 1857, was that of a gentleman of 48 years, who suffered from atrophy of the thenar and hypothenar eminences on both hands, and of both deltoids. Repeated dyspeptic affections, probably, had their share in causing the disease. The patient had a fissure of the anus which had been overlooked, as none of his former medical attendants had properly examined him. In order to mitigate the atrocious pain, which had tormented him for years whenever his bowels were acting, he had got into the habit of taking large doses of morphia, and to prevent hard alvine dejections, which in his state were most painful, he afterwards took saline aperients. Under these circumstances, not anticipating any favourable result from the use of the waters, I advised him to have himself

operated first at home, and to return here afterwards. I have not heard of him since his departure. — The second patient was a renowned London physician who, from unknown causes, had suffered long from atrophy of numerous muscles of the upper and lower extremities. I attended him in the summer of 1859 for two months, without obtaining any result. The disease had begun with him in the recti femoris and had gradually spread so far, that he could only walk a very short distance and that only when well assisted, on even ground, and was obliged to be fed like a child. — The third patient was a German merchant, thirty years old, in whom the atrophy, though it had attacked a great many muscles, was not of great intensity. Frequent intestinal catarrhs had probably contributed to the formation of the malady. The inward and outward use of the waters seemed to have a favourable influence upon the disease, but his stay — in the summer of 1860 — was too short to permit of a decided opinion on the probable ultimate result.

Conclusions. 1. In the six cases which I have detailed, the progressive muscular atrophy appears in various degrees of development. In the four last of them the disease was comparatively not far advanced. In the first two cases (14 and 15) a great number of muscles were affected. With the exception of the sixth case (19), the affection had begun in the hands. It is probable that in consequence of the longer duration of the disease in the muscles of the hands and forearms in cases 14 and 15, and of the gastrocnemii in case 19, those muscles had attained a higher degree of atrophy than the other muscles which had been attacked later, and therefore resisted a treatment, which in the same individuals proved itself highly efficacious against the malady in muscles which had been affected a shorter time and consequently could be supposed to be less desorganized. The muscles which became affected

last in case 15 were of the lower extremities. Aran lays great stress upon the circumstance of the disease beginning in the upper extremities, as forming an excellent criterium by which to distinguish atrophy from disease of the spinal cord. To be sure, where the disease first attacks the arms, as in most of the cases which I observed, the diagnosis is facilitated, but, generally speaking, I do not consider the diagnosis to be difficult in any case, no matter where the disease shows itself first.

2. Opinions were a long time divided, as to whether this disease originated from an abnormal state of the roots of the spinal nerves, or whether it was a primary lesion of the muscles. At the present moment the latter opinion seems to have most partizans. The results obtained in the cases above mentioned, speak in favour of a primary muscular affection, for it is very doubtful, whether such diffuse and inveterate muscular lesions could have been entirely or even partially cured or improved, when brought on by an affection of the central or peripheric nervous system. Though in some few post mortem examinations morbid changes of the anterior roots of the spinal nerves were discovered, it is questionable, whether these were the cause of the atrophy or, which I think to be more probable, its consequence. This opinion seems to have been latterly adopted by most of those who have made observations on this subject.

3. Three of my patients attributed the origin of their sufferings to a cold. But it is difficult to conceive how checked perspiration alone, without any other noxious influences, can engender a wasting palsy, for if this were the case, we should probably meet with far more cases of atrophy. In cases 14 and 15, the disease cannot be traced to any other cause but a cold, unless we feel inclined to ascribe it to the close relationship of the parents of both patients. In cases 16 and 18 it is not improbable that by the frequent affections of the alimentary canal

which had taken place in both cases, nutrition was disturbed, and thus formed the germs of the disease. With regard to case 16, I ventured to pronounce this opinion six years ago, and it has been since confirmed by case 18, and by two of the cases which I mentioned to have observed, but of which I have given no nearer details. In case 16, the effort made by the patient with his hands to protect his wife, can be considered only as an accidental cause, perhaps it had no connection whatever with the subsequent malady, and was only looked upon as the cause by the patient, because he first became aware of his infirmity after this incident. In case 19, indeed, strong muscular exertion seems really to have been the sole cause, whereas in case 18 the exertions at least contributed greatly to the development of the malady. In case 17, the insufficient nourishment and the abuse of purgatives had probably disturbed nutrition and brought on anaemia, in consequence of which atrophy appeared afterwards. With the exception of the patient in case 19, who was a very strong man, the patients observed by me, were feeble and all, with one exception, advanced in age, thus forming a contrast to the observations of Aran and other writers on this subject, whose patients were young and robust.

The opinion now and then met with, that progressive muscular atrophy is possibly of rheumatic origin, is not confirmed by my observations. Not one of the patients observed by me had ever suffered from rheumatism. The pain of which several of them complained was not of the same nature as that met with in rheumatism, for they suffered from muscular cramps, a jerking of the sinews, and fibrillar contractions. These spasmodic affections had their seat in those muscles alone which were not completely wasted, whilst in patients whom I saw affected with rheumatic atrophy, the pain in the region of the completely atrophic muscles frequently lasted as long as they were not cured from their general rheumatism. In an

English officer, for instance, whom I attended four years ago, the first interosseus externus was, in consequence of a chronic rheumatism, from which he was still suffering, so wasted, that the radial surface of the metacarpal bone of the index was so sharp and prominent as to show no traces of muscular substance. The atrophy was limited to this muscle alone, but the radial surface of the metacarpal bone, though quite devoid of muscle, was not exempt from the rheumatic pain which was spread over a great part of the body. In another rheumatic patient whom I attended last year, so complete an atrophy of the left infraspinatus scapulae had remained from an acute rheumatism which he had several years before, that the fossa infraspinata appeared to be deprived of all muscular flesh. Nevertheless, when the patient later had a new fit of rheumatism, this part was quite as painful as the others which were suffering from rheumatism. After this patient had been freed from his rheumatism by the use of the springs, the pain in the fossa infraspinata ceased likewise.

Progressive atrophy may exist without pain, as in case 19; rheumatic atrophy is, at least in its beginning, never without it.

The march of rheumatic atrophy is, generally speaking, much quicker than that of progressive atrophy. The former, in most cases, destroys a muscle in a much shorter time than the latter, but it does not seem to attack so great a number of muscles, as the latter.

In rheumatic atrophy, generally, there are in consequence of the rheumatism other affections present, especially swellings of the joints.

When conversing with medical gentlemen, who had but little experience in progressive atrophy, the question has been frequently put to me, whether the efficacy of the springs in those cases of progressive atrophy which had been cured or relieved by their use, might not be accounted

for by their generally proving so beneficial in rheumatism. After what I have just said about the difference existing between both atrophies, it is evident, my answer was decidedly negative.

None of the patients observed by me had ever suffered from syphilis or a metallic cachexy.

4. The march of the disease was slow and progressive. Even where it had caused the greatest destructions, it had spared smaller or larger fascicles of muscles in the immediate vicinity of those destroyed.

5. Progressive muscular atrophy can be arrested and even cured by the Aix-la-Chapelle sulphureous springs. It certainly cannot be expected that the waters should exercise any influence on those muscles, in which all muscular fibre is already destroyed or degenerated into fat. Out of seven patients, whom I attended a sufficient time to be able to judge of the effects produced, there were six, who were benefitted by the waters, and only one, on whom no effect was visible. In cases 14, 15 and 19 those muscles which many years before had first been attacked were not improved, but this negative result does not authorize us to form a less favourable opinion of the effects of the springs; for, if in these cases they did not exercise a beneficial influence upon those muscles which were first affected, and therefore probably completely wasted long ago, their influence upon the muscles which had become atrophic at a later period, was evident. The patient of case 16, still enjoyed perfect health four years after his course at Aix-la-Chapelle. The patient of case 18, though he had since suffered from other severe ailments, had no return of atrophy. The patient of case 17, though he left improved, died later from another disease. If we therefore exclude this case from the list of those benefitted by the waters, and are even inclined to look upon it as an unfortunate one, the general result of the use of the waters in progressive muscular atrophy is, nevertheless, such as

to give these springs a just claim to a repeated trial in this disease. If they acted beneficially in cases of eight, nine and even thirteen years standing, we are justified in supposing that they will probably be still more efficacious in cases of fresher date, as really they have already proved in cases 16 and 18.

6. The disease having once been brought to a standstill by the use of the waters, and become retrogressive, the improvement may even go on after the course has been terminated.

5. Neuralgies.

That a medicinal agent whose efficacy in paralysis we have sufficiently proved, should be recommended in neuralgy likewise, may be rather surprising, but ceases to be so, when it is borne in mind that both these infirmities, which appear so different from each other, often originate from the same causes, and principally from checked perspiration, and that, at all events, an increased action of the skin, brought on by the springs, can exercise a salutary influence on the economy as well through the antagonism, existing between the nerves and the cutaneous integument, as by elimination of morbid elements. Besides, some allowance is to be made for the circumstance, that by a different employ of the same medicine, equally favourable results can be obtained in diseases which are apparently widely different.

The neuralgies in which I employed these waters with success, were especially those which had attacked the brachial, intercostal and sciatic nerves, and spinal neuralgy. In each case the treatment was, necessarily, in accordance with the cause of the complaint, its duration and with the constitution and temperament of the patient. Thus, when the disease had been brought on by checked perspiration, the chief object of the treatment was to restore the action of the skin; and therefore the patient had to drink large

doses of mineral water and to take vapour-baths in addition to the plain ones. To delicate persons, plain and mild douche-baths and a moderate inward use of the springs were prescribed. Plethoric patients took only plain baths combined with friction, and douche-baths at longer or shorter intervals. In inveterate cases, especially of phlegmatic individuals, strong douches were principally made use of. When there existed a complication with torpidity of the digestive organs, which was almost always the case in spinal neuralgy, aperient mineral waters were drunk alternately with the spring, or an aperient salt was added to the sulphureous water. With some patients who, besides their neuralgy, suffered from great debility or atrophy of the adjacent muscles, the treatment was directed in such a way as first to remove the pain, and afterwards to strengthen the weakened parts. Among these patients there were several, who, being unable to remain a sufficient time to see all their wishes fulfilled in one season, left when feeling free from pain and regained their strength by a second course in the next following year. In the treatment of neuralgy, I but very seldom met with a febrile reaction, but almost always perceived the improvement coming on gradually. In some cases, the pain seemed to increase at first, and it only abated at a later period of the course, or even after the patients had left. (See case 5.)

6. Contractures. Consequences of contusions, fractures and articular dislocations.

In contractures we generally observe a spasmodic contraction of some muscles, an inactivity or even an atrophy of their antagonists, and a greater or lesser swelling of the articular ligaments. It can easily be understood, how an ailment, marked by the coëxistence of these morbid conditions, can be remedied by a judicious use of these springs. For, the immersion into the warm sulphureous water is equally beneficial to the muscular contraction as to the

swollen ligaments, while the douche, when directed upon the inactive muscles and the diseased ligaments, stimulates the former to greater activity and diminishes the swelling of the latter by furthering resorption. Our frotteurs, while giving the douche, are busily employed in rubbing the inactive muscles and in moving the contracted limbs, and obtain thus the same results, as is done by medical gymnastics. But not only the outward use of the springs is beneficial in contractures; their inward employ is of little less importance, for besides those contractures which are the consequence of external injuries, there are quite as many and even more contractures which are caused through rheumatism, gout, scrofula etc. And these are precisely the cases, which indicate the internal use of the springs. The vapour-baths are a powerful auxiliary, which, though we have not always recourse to them, assist very much in soothing the pain, in diminishing the swelling, and sometimes in subduing the diathesis, by which the local lesion has been brought on. — Thus, these waters and their various modes of employ afford excellent means for the cure of contractures. Unfortunately, such a cure, in many cases, requires a much longer time than most patients can, or are willing to devote to a course of waters. From this reason, the number of cures witnessed by me, though not at all insignificant, is far less considerable than it would have been, if all patients, who might have been cured, had perseverance enough to make a sufficiently long stay.

In cases of disturbed function, remaining after contusions, fractures or sprains, I have frequently seen the best effects obtained through the waters. Plain baths as well as douche and vapour-baths, were of the greatest service in furthering the resorption of the morbid products of inflammation, and in invigorating the muscles which had become feeble through long inactivity.

The same means were equally efficacious in removing the pain which at changes of the weather and under the

influence of the atmospheric electricity is so troublesome to many patients, who formerly had a fracture. The stiffness of the joints, proceeding from fractures in their vicinity and sprains, is often cured by the waters. (A true ankylosis, to be sure, will never be cured by any mineral water.) In some cases of deformities of the bones through exuberant callus, I have noticed a diminution of their volume while the patients were taking the baths. But as these deformities are frequently effaced by the efforts of nature alone, it is difficult to say what share the baths may have had in the result.

7. Wounds with unhealthy secretion, ulcers and fistulas.

There are a great many persons, in whom the slightest wound, even when inflicted with a sharp instrument, has little tendency to heal either by adhesion or by good suppuration, but is always apt to ulcerate. The greater part of the persons, whom I saw with this unpleasant disposition, had a strumous constitution or suffered from anaemia; in general they had a slow circulation and were most impressionable to atmospheric influences, especially to the cold air. The advantages to be derived under these circumstances from a course at Aix-la-Chapelle, are very great, and can be explained without difficulty by the action of the skin being increased, and the circulation rendered more active by the waters. In people suffering from chronic cutaneous diseases and in rheumatic or gouty persons likewise, wounds, generally, heal slowly, and even when healed, rheumatic or gouty pain frequently affects the scar or the parts near it. Such consequences can be the more readily anticipated, if the wounded persons have lost much blood, or if they had to go through too severe an antiphlogistic treatment. Too long protracted cold fomentations or a cold caught after having been wounded, are very injurious to such constitutions. From the results obtained through the Aix-la-Chapelle springs in rheumatism,

gout and skin affections we may expect a similar efficacy in the ill consequences of wounds, inflicted on persons suffering from these complaints; and, indeed, the late wars in the Caucasus, in Algiers, in the Crimea etc. and some duels, have procured me sufficient opportunities to observe their salutary action.

The springs accelerate the separation of fragments of bone and foreign substances from the wounds, and under the use of the waters, fragments of bullets, of wadding, of dress etc. frequently leave a place where they had been hidden for a long time, and gradually approach the surface, thus facilitating their removal. I have seen several times fistulas which were caused or kept up by foreign substances, heal after a comparatively short use of the waters.

The springs exercise a sanative influence on atonic ulcers, which may be partly accounted for by their invigorating effect upon the general health. A few baths, frequently, are sufficient to cleanse those ulcers and to promote healthy granulation. I even saw in some cases such a rapid improvement, that I was almost tempted to admit a specific action of the springs.

8. Cutaneous affections.

The skin being the tissue which is the most accessible to the influence of the springs, and forming a principal conductor of their action on the economy, most naturally has its share of the benefits derived from the waters. The tenacity and tendency to relapses which distinguish most chronic cutaneous affections, very frequently necessitate the most heroic medicines. We can, therefore, congratulate ourselves on possessing in the Aix-la-Chapelle hot springs a medicine which, though it may not be efficacious, or indicated in every case, does not injure the constitution and frequently effects cures in such cases, which were treated in vain by other and even powerful medicines.

The species of skin diseases, against which I consider myself justified in recommending these springs, are the following:

Herpes, Eczema, Impetigo, Acne, Psoriasis, Pityriasis, chronic Urticaria, Prurigo, Lichen and Intertrigo. Though a good number of the persons who were affected with either of the diseases just mentioned, have left Aix-la-Chapelle without having been cured, the number of cures is, on the other hand, so great, that the latter form a strong majority in favour of the sanative effects of the springs in these complaints. Besides the forms cited I have seen others, for which I abstained from recommending the springs, and others, in which the waters were of no use at all. *Itch*, for instance, is not curable by them, and if old authors speak to the contrary, I am rather inclined to suspect their having mistaken a lichen or an eczema for it. In *Ichthyosis*, of which I have seen three cases, I have not derived the slightest advantage from the springs. It is not surprising that I have not obtained success in cases of *Cancer* and *Lupus*, when urged by the patients to try the waters. An enormous *Keloid*, which I treated in 1855, in a native of the West Indies, seemed at first to decrease, but eight weeks later gained in intensity.

a. Herpes. The various species of herpes generally follow an acute march and then do not indicate the use of these springs. But there are forms of it, especially the herpes *circinatus* and *phlyctaenoides* which, when occurring in persons with a lymphatic constitution, have a tendency to become chronic. In cases of this kind I have obtained fortunate results. In addition to this I had several times occasion to become acquainted with the value of these springs in herpetic affections of the mucous membranes. Herpes sometimes affects the throat, the uvula, the tonsils or the palate, and seems to spread now and then on the larynx and the trachean artery. I have observed several patients, who, at longer or shorter intervals,

had been subject to a tickling in the larynx and violent fits of coughing with dyspnoea and more or less abundant expectoration of mucus, which symptoms had come on either simultaneously with or previously to an eruption of herpetic vesicles in the throat. The affection of the air-passages had generally passed off so quickly, that the medical attendants of those patients were induced to account for the affection of the respiratory organs by a formation of herpes on the mucous membranes of the larynx and wind-pipe, and for this reason they had sent them to Aix-la-Chapelle. In a patient attended by me in 1855, who had a fresh attack a few days after his arrival, I have myself observed the presence of the herpes on the tonsils, while the respiratory organs were affected. In all other patients of this kind, whom I saw before and after this case, I have not witnessed an attack. All did very well during a course from of four to six weeks. From some of them I often heard a long time afterwards, that they had not been troubled with relapses. Of one patient, attended in 1850, I know that even ten years after his course, he continued in the enjoyment of perfect health.

Some physicians are inclined to admit an exanthematic form of chronic gastritis. Though I do not know whether it is perfectly correct to class such an ailment under the herpetic affections, I cannot help recording a case which is too interesting to be passed over in silence.

Case 20. Mrs. U., aetat. 40, from Paris, had suffered for a long time from symptoms of a chronic inflammation of the mucous membrane of the stomach. The disease resisted all treatment and the stomach could retain only very little food. Latterly an eminent physician, whom she consulted, and who was informed by her, that previously to the affection of the stomach she had had a slight eruption on her lips, gave it as his opinion, that the evil was of exanthematic origin (*de nature dartreuse*) and prescribed the use of the Aix-la-Chapelle sulphureous springs. On her arrival in July 1849, the symptoms of inflammation were so distinct, that without the authority of that highly renowned physician I should have shrunk from prescribing the inward use of the waters, as it is an

absolute rule to consider the gastritis as a counter-indication of it. However, I began very slowly and prescribed not more than two ounces of the waters to be drunk twice a day. This dose being well borne, the daily dose was gradually increased up to a pound. The course which was continued for four weeks, was not interrupted by any accident, the symptoms of the gastritis gradually disappeared one after the other, and the patient left in perfect health.

b. Eczema. As long as the eczema is in an acute state the springs are counter-indicated. The accuracy of this axiom has been several times practically proved by the cases of some inhabitants of this town, who suffering from acute eczema took to bathing without medical advice, which always aggravated their state. On the other hand, I have almost always found the waters of the greatest use in the chronic forms of eczema. In the majority of cases they acted very mildly, and the patients soon perceived an alleviation which gradually increased till a perfect cure was obtained. Some patients, at first, complained of an aggravation, especially of the itching, but were nevertheless cured. A febrile reaction was observed in but few cases. During the time, which was not passed in the bath, the affected parts, naturally required proper dressing in order to prevent friction and to keep the sores clean. The local applications employed for this purpose were, naturally such as were in accordance with the state of irritation of the skin. As in many cases none but such topical remedies were used, as had been employed by the patients previously to their coming to Aix-la-Chapelle, it was not difficult to form an opinion as to the great share which the springs had in effecting the cure.

Case 21. V., aetat. 40, a farmer out of a Dutch village some few miles from Aix-la-Chapelle, suffering from *eczema impetiginoides*, but otherwise quite healthy, consulted me first in 1845. He could not remain in Aix-la-Chapelle for the use of the waters; so I tried to cure him without them, in which I succeeded. A relapse in 1848 was likewise cured by me without the springs. A new return of the disease in 1852 was cured by the inward use of iodide of potassium and the local application of a

weak solution of sulphate of zinc. The eczema returned in 1855 and yielded to iodide of potassium inwardly and to frictions with an ointment of the empyrenumatic juniper-oil. When the patient had a fresh attack of eczema in 1857, I tried the latter medicines again, but when they had been continued for six weeks without success, I prevailed on the patient to remain here for some time to follow a course of waters. He now took iodide of potassium in mineral water, bathed every day and used friction with an ointment of the empyrenumatic juniper-oil, and was cured in a few weeks, and has been spared from eczema ever since, as I heard from him when meeting him in the streets here a few weeks ago.

It speaks very much in favour of the springs, that their use seems to offer, though certainly not in each case, great guarantee against relapses, which is of great importance, as the eczema, generally, is very apt to return. I occasionally have met with persons five, six, eight, fourteen years after I had cured them here from eczema, and understood that they had remained, free from it since, and I know a citizen of Aix-la-Chapelle, whom I cured of eczema by a course of waters in 1835, who up to the present moment has had no relapse. As these results can only be obtained by an entire change of the vitality of the skin and an improvement of the constitution, it is but natural that all who were cured found their general health improved also. A metastasis — which is so much dreaded by many physicians, as to make them abstain from any attempt to cure an eczema — was *never* observed by me in the patients whom I attended, nor have I heard of such an event having happened after their cure. The cases of eczema in which no satisfactory result was obtained, were either of very old standing, or the patients could not be prevailed on to follow the necessary regimen.

c. Impetigo. Of this complaint, I had comparatively but few cases to attend, but almost all were successfully treated. All these patients had a lymphatic constitution, and with all of those who were cured, the diminution of the local disease was accompanied by a simultaneous improvement of the general health. From several of my

patients, of whose health, after their course, I had no information six years ago (*S. traité pratique* etc. p. 61), I have since received good news, as also from some others whom I attended in 1856 and later, so that I am now enabled to express it as my firm conviction that the Aix-la-Chapelle waters can effect a lasting cure in impetigo.

d. Affections of the sebaceous glands; acne. I do not think that there is any mineral water powerful enough to cure, by itself, such an affection, when it has attained a higher degree of development. In slight cases the Aix-la-Chapelle waters have some effect, but I never have obtained a favourable result in bad cases without the simultaneous local application of other remedies. These were chosen according to the more or less obstructed state of the sebaceous glands, and the degree of irritation of the surrounding skin. While alkaline lotions were employed to remove the obstruction of the glands, solutions of borax or other soothing remedies were used in order to diminish the irritation of the skin. The springs were employed both inwardly and outwardly in the form of plain and, according to circumstances, of vapour-baths. Sometimes aperient salts were added to the mineral water which was drunk.

The cases of *sycosis*, which I attended, were nearly all of the worst kind. In most of them I could ascertain some connexion with gout or rheumatism. This partly explains the efficacy of the springs in this affection. But I could not expect a perfect cure from the springs alone for, owing to the long standing of the disease, in most patients the skin had undergone such organic changes as to make it altogether impossible to restore it to its normal state, without having recourse to powerful local treatment. Nevertheless, I did not resort to the latter, until I perceived that the springs had exercised some influence on the economy, but then nitrate of silver, tincture of iodine and other similar means proved very serviceable auxiliaries in effecting the cure.

e. Psoriasis, when not much developed, can be cured by the springs alone, provided the constitution of the patient permits of a longer duration of the bath. In *psoriasis inveterata* and other forms of the disease, when spread over a great part of the body, the waters must be combined with other means. The mode of treatment which I found the most efficacious is: Iodide of potassium in mineral water for inward use, plain baths of long duration, vapour-baths, and frictions with tar or empyreumatic juniper oil. This treatment has effected not only a transient cure, but has freed a great number of my patients from the complaint either permanently or for a considerable time. This success appears the more fortunate, as psoriasis is generally known to have a great tendency to relapses. A physician of great experience in cutaneous diseases, after having tried all methods which are recommended for the cure of psoriasis, has declared that of all the means he employed in this complaint arsenic was the only one that had a good effect, but that even after this medicine a few months afterwards relapses had come on*). Having obtained fortunate results by combining the sulphureous springs with medicines, which without the aid of these waters are, generally, without avail, I have been the better enabled to ascertain the efficacy of the springs in psoriasis. Even if only a temporary relief were procured by the method of treatment followed by me, it would be still preferable to arsenic notwithstanding the strong recommendation of the latter by great authorities. But I have gained the conviction that the Aix-la-Chapelle springs, when combined with the above mentioned medicines, offer great guarantees against relapses. A Russian officer, whom I cured in 1835 by the inward and outward employ of the springs, by aperient medicines and a tar-ointment, had remained free from psoriasis up to 1852,

*) Veiel. in Deutsche Klinik 1855.

when he returned to Aix-la-Chapelle for a slight chronic rheumatism. A Dutch gentleman, cured in 1840 by the internal use of the waters combined with iodide of potassium, by plain and vapour-baths and a tar-ointment, perceived only so late as in 1853 a few spots of psoriasis, from which he was freed by a second course. A Scotch gentleman, 50 years old, whom I had cured in 1853 by nearly the same remedies, remained free from psoriasis up to 1860, when he died of the small-pox. Other patients who had been cured in the same manner, informed me six or seven years afterwards, that they were doing well still, and others that they had relapses after three, four and five years. Of some other patients who left quite well I have received no information. In nearly all patients who were not cured, the disease had taken such dimensions and was so deeply rooted, that I doubt whether any other treatment would have been more successful. But I have treated also some patients, in whom, though the psoriasis was not far spread at all nor had lasted very long, it, nevertheless, resisted the treatment.

The method of treatment adopted by me has the great advantage of being well borne even by delicate persons, as will be best proved by

Case 22. V. from Paris, aetat. 14, delicate and feeble, of a very nervous temperament, and whose mental faculties were far more developed than could be expected from his age, had suffered from psoriasis for several years. Various methods of treatment having been tried without success by an eminent Paris physician, the latter, having become acquainted with the results of my treatment, sent him to Aix-la-Chapelle and recommended him to my care. The little patient arrived here June 28th 1860, accompanied by his father. The latter was a strong fine man who never had been ill in his life nor had ever suffered from a cutaneous affection. The mother who, I was informed, was delicate and subject to nervous affections, had never had a skin disease either. The patient had always been delicate since his birth, and had continued so notwithstanding the very great attention which was paid to his health; but notwithstanding his debility his general health was good. Thick set spots of psoriasis guttata were spread over nearly the whole surface

of the body. I prescribed 1 grain of iodide of potassium to be taken in a glass of 6 ounces of mineral water in the morning, and the same dose in the evening, a bath of 15 minutes every day, and frictions with a eade-oil ointment. Nourishing diet, especially animal. The patient bearing this treatment very well, the dose of iodide of potassium was gradually increased to 3 grains bis p. d., that of the mineral water to 2 pounds a day, and the duration of the bath lengthened to half an hour. During this treatment the patient visibly gained in strength, looked much better, and the psoriasis vanished more and more. August 3rd numerous small lichenous spots, accompanied by violent itching, appeared with a slight fever. The treatment was suspended and the patient was kept in his room for several days. This eruption having completely faded away towards August 8th, the patient began bathing again and using the frictions with the eade-oil ointment. August 18th, when he was obliged to leave, there were but very few traces of psoriasis still remaining. The patient was perfectly well, and had gained in vigour and had got an healthy appearance. I advised him, to take now and then some lukewarm baths of common water, to continue the ointment for some time, and to take nourishing food. In August 1861 the little patient wrote me a letter by which he stated that since his departure from Aix-la-Chapelle he had constantly enjoyed perfect health, his psoriasis had completely disappeared a short time after he had left, and that every one was surprised at his healthy and vigorous appearance.

f. Pityriasis. I have never met with a case of acute *pityriasis rubra* among my patients who had come here for the waters, and from what I have seen of this complaint elsewhere, I should not consider myself justified in employing the waters in it. In *pityriasis capitis* and in the *versicolor* I have found the springs very beneficial. In *pityriasis capitis*, besides the use of the waters, I had recourse to a simple ointment or to a borax ointment, to be rubbed on the skin of the skull. The *pityriasis versicolor* required the simultaneous application of a tar- or eadeoil-ointment. Up to the present moment I have not seen a case of *pityriasis nigricans*.

g. Chronic Urticaria. Of the patients, affected with chronic urticaria, whom I attended, rather more than half were cured by the use of the springs. A failure of the treatment could be attributed to the long duration of

the complaint or to its complication with other alterations of health, especially old standing obstinate dyspepsy, or to a want of perseverance on the part of the patients who when not perceiving alleviation as soon as they expected, had not patience enough to remain any longer. Certainly it often requires an immensely long time to cure an old-standing urticaria, especially when it is spread over a great part of the body, and once it happened that I did not succeed in curing a chronic *urticaria tuberosa*, spread over the upper and lower extremities, till after a treatment of eight month's duration. There are but comparatively few patients who are willing or able to devote even three or four months to a course of waters.

h. Prurigo. Physicians who from having seen many cases of prurigo are acquainted with the obstinacy of this complaint, will not be surprised at my open avowal, that nearly two thirds of the patients whom I attended for prurigo, left uncured; and to some even this result will appear very satisfactory. I have successfully treated several cases of prurigo *mitis* and effected even some cures in the more tenacious forms of prurigo.

i. Lichen. The acute lichen is not amenable to a treatment by the Aix-la-Chapelle waters. On the chronic lichen I have made some observations which speak in favour of the efficacy of the Aix-la-Chapelle springs.

k. Intertrigo. Medical men who have had only occasion to see slight cases of intertrigo will hardly expect to see this complaint mentioned in the list of the cutaneous affections, which may necessitate the use of our springs; and, indeed, I do not intend recommending these springs for an intertrigo, which is developed but in a slight degree, though it would beyond doubt, be benefitted by them; I am speaking only of the worst cases of it, which are by no means uncommon. The negligence of some patients, and if ladies are affected with it, their pudor are the cause of their not seeking advice till the affection has become so

aggravated by long delay that it is difficult to cure. Such were exactly the cases which came under my notice among the visitors of these springs. Nevertheless, I have almost always succeeded in effecting a cure. I have several times observed an intertrigo in ladies at the change of their constitution, and as with many ladies the slightest indisposition, occurring at this period, is apt to excite them very much and to keep them in constant anxiety, I have almost always found the health of those who had suffered long from it very much impaired. The cure of the local infirmity brought on a feeling of ease and a mental cheerfulness, which exercised the best influence on the constitution.

The springs not only effect cures in the cutaneous diseases, just mentioned, but act also as a preservative medicine on persons who, though free from them for the moment, are threatened by relapses of the affections. Besides the complaints mentioned, there are some other skin diseases which, though while existing do not indicate the use of the springs, can make their employ desirable at a time when the patients are free from them; viz. *erysipelas* and *boils*. As long as there is an *erysipelas*, these springs can only be injurious; in *boils* their use is at least superfluous, but later, the springs act most beneficially, as by cleansing and invigorating the skin they diminish the tendency to these affections.

9. Chronic affections of the mucous membranes of the respiratory organs. Nervous Aphony.

The chronic catarrhs of the nose, the larynx, the trachea and of the bronchi are frequently relieved and even cured by the use of the springs, which are especially efficacious in cases with abundant secretion of mucus. In these affections, the internal employ of the waters has appeared to me to be the most important, though I also had recourse to their outward application. In several cases I have been successful by the use of the vapour-baths,

generally preferring such, in which, as in the Newbath-house, the mucous membranes could be brought in direct contact with the vapour. — It is almost superfluous to add, that the presence of pulmonary tubercles counter-indicates the use of the waters.

The springs are quite as efficacious in nervous aphony, as in chronic catarrhs of the larynx, and I have repeatedly obtained great success in this malady through the inward use of the waters and a discreet mode of applying the douche.

10. Chronic affections of the digestive organs, the liver, the spleen.
Hæmorrhoides.

The Aix-la-Chapelle springs, especially their inward employ, are counter-indicated when there are symptoms of increased secretion of the mucous membrane of the stomach — a bitter taste, a furred tongue, a fulness in the cardia; whilst they are well worth recommending in simple debility of the digestive organs — viz. when, the tongue being clean and the stomach free from pain and fulness, the appetite is deficient and the digestion has not sufficient energy. In such cases the springs are most beneficial, not by acting as an aperient, which cannot be expected from them, but by regulating the action of the bowels and increasing the appetite. In chronic vomituration, from what ever cause it originated, I have not considered myself justified in having recourse to the springs, except in case 20, and in the one, which I am about to record.

Case 23. August 5th 1861 I was called to see Mr. W., captain in the English army. The patient, ætat. 36, had a strong constitution but looked very pale. With the exception of the last two years he had constantly enjoyed good health. Two years before, when out shooting in winter in Canada, he had first felt unwell after eating a piece of hard frozen meat. Since that time liquid food was the only one which his stomach had borne perfectly well; whilst, with the exception of fowl, meat was almost always rejected half an hour or an hour after eating. No morbid symptom could be discovered on examination of the abdominal organs. The tongue slightly furred. Bowels costive. — I was

just going to tell the patient, that I could not expect any benefit from the use of the springs in his case, when he informed me that he had already drunk that very morning three large tumblers of the water, after which he had bathed and afterwards had taken a good breakfast of coffee and two mutton chops with a good appetite, and had felt perfectly well up to that moment, three hours after breakfast. On hearing this I abstained from dissuading him from the use of the waters, as I at first had intended to do, and the first dose of them having done no harm, I became desirous to see what their subsequent action would be, and contented myself with prescribing him a smaller dose than that he had begun with. — After having drunk two glasses for several days and continuing to do well, the patient gradually increased the dose to four. The course was not interrupted by any incident, and the patient left in perfect health Sept. 5th.

Though a single case, especially of such an obscure nature as the one just mentioned, does not prove very much, still it may suggest, that chronic affections of the stomach do not so absolutely proscribe the use of the springs, as we are accustomed to believe. However, further observations are necessary, before we admit of new indications for the use of the springs in affections of the stomach.

In chronic affections of the liver and spleen the springs sometimes act most beneficially, and I have seen some tolerably large swellings of these organs yield to the use of the springs, especially when an aperient salt was, now and then, added. If, in general, in chronic affections of these organs the Aix-la-Chapelle waters cannot rival with some other mineral springs which are justly acknowledged to be of the greatest service in such diseases, they can, nevertheless, be recommended, when there is a complication with skin diseases or gout and rheumatism, and I have seen great cures effected through them in such cases. The syphilitic waxy degeneration of the liver will be mentioned lower down.

Since the time when the internal use of these springs was first introduced, — at the end of the seventeenth century — they have always been recommended for hæmorrhoides.

There being a great number of other mineral springs, which are also justly considered to be beneficial in this complaint, I think it the more necessary to specify the circumstances, under which I consider myself justified by my experience to recommend the Aix-la-Chapelle springs in this affection. With regard to the local complaint, I must confess that I never expected to see hæmorrhoidal swellings disappear by a course of the waters, and that I always was satisfied, if I succeeded in softening or diminishing them by their use. This effect was obtained by general and hip-baths of moderate, agreeable temperature, repeated injections of sulphureous water and the internal use of the water, combined, now and then, with small doses of sulphate of soda or of magnesia. I have considered this addition to be necessary, as the hæmorrhoides, generally, are but a symptom of abdominal plethora, which I thought to diminish best by the salts, whilst the sulphureous water appeared to me best suited to counteract a relaxation of the vascular system of the abdomen. That the springs should have a tonic influence upon the abdominal vessels, is not an arbitrary conjecture of mine; for we are forced to admit such a tonic action when observing how excessive hæmorrhoidal bleeding is diminished or arrested by the use of the waters alone. As long as a hæmorrhoidal bleeding is to be considered as a wholesome loss of blood, it is important to add, now and then, an aperient salt to the water. To patients who are weakened by hæmorrhages, in general where there is anaemia — whether preceding or following the loss of blood — the mineral spring taken internally by itself alone is of the greatest service. I have seen several patients in whom the use of aperient mineral waters had brought on bleeding hæmorrhoides, which had acted most beneficially in the beginning, but afterwards, when the bleeding had become too abundant had caused an anaemia. As soon as through the use of the Aix-la-Chapelle water the bleeding had been diminished

or arrested, the anaemia ceased, and the patients gained their strength again and did tolerably well for some time afterwards. But we can very seldom hope to effect a complete and permanent cure in such cases; for, in general, the complaint has existed already too long, when the patients come here, and only very few of them are inclined or so situated as to avoid what generally causes the abdominal plethora and the haemorrhoides, viz. good dinners and a sedentary life. In consequence of this, such patients, for the greater part, were a few years later troubled again by haemorrhoides, and either returned to Aix-la-Chapelle, where, this time, I made them drink the waters with some aperient salt, or visited some mineral aperient spa.

The springs are counter-indicated in all cases of this kind, which are complicated with active determinations of blood to the head.

11. Chronic affections of the urinary and genital organs.

The Aix-la-Chapelle springs are very efficacious in chronic catarrh of the bladder, if there is no complication especially with inflammation, and no other organic alteration than that of the mucous membrane of the bladder which is peculiar to the catarrh. They are also of great use in rheumatism of the bladder, and in rheumatic and catarrhal chronic affections of the kidneys. Their effects on the chemical composition of the urine are beyond doubt, and I had frequent occasion to observe a remarkable diminution of the uric acid after a short use of the waters. They, certainly, are not endowed with the power of dissolving calculi of uric acid, but having several times seen patients, who, after having passed uric concretions of the size of a pea or a bean during a course of waters, remained free from them for a long time afterwards, I do not think to go too far when admitting that the use of the springs is apt to diminish the tendency to such formations. The relation, existing between gout and uric diathesis,

may perhaps explain the utility of the Aix-la-Chapelle springs in the former.

I have seen several cases of *incontinence* of urine brought on by paralysis. The patients who were cured of it, had been all paralysed in consequence of rheumatism, with the exception of one in whom it originated from spinal disease (see case 13). I will leave it to the reader to decide, how the incontinence of urine was brought on in the following case 24, and how the waters effected a cure in it.

Case 24. Baron X., a Prussian, had long suffered from gonorrhoea, but which was arrested at last. From this, such a debility and weakness of the neck of the bladder remained, that he was obliged to make water every ten minutes, when walking, and almost every hour when being in a horizontal position. A hydropathic treatment at Graefenberg under Priesnitz which lasted nine months, and which was followed afterwards by a long course of mercury, having been without success, he was sent to Aix-la-Chapelle, where he arrived in September 1840. The urine was passed every ten minutes in small quantities. The catheter could be introduced without difficulty, and found no impediment in its way; there were no strictures nor any secretion of mucus from the urethra. The urine was clear. The prostate was free. No abnormality could be found either in the perinaeum or in the region of the bladder. The patient was excessively weakened and quite emaciated in consequence of the many modes of treatment he had so lately undergone. He had scarcely drunk the waters a fortnight when a crisis was produced by a purulent mucous secretion of the urinary passage. This continued during three weeks, at the end of which it ceased. In the mean time, the weakness and irritability of the bladder had been gradually diminishing, and by the use of the waters for three weeks more, he was entirely cured. He remained until the month of July 1841 at the country-house of a relation, in the vicinity of Aix-la-Chapelle; and seeing him occasionally during his stay at that place, I had the satisfaction to observe that his cure was permanent; for though, as a keen sportsman, he exposed himself during the winter months to all the vicissitudes of the weather, and exceeded sometimes in eating or drinking, yet not the slightest relapse ever took place.

The waters are not indicated either in acute or chronic *gonorrhoea*; but they have been prescribed by me with

advantage in swellings of the testicles and gonorrhoeic articular rheumatism.

The springs are efficacious in swellings of the neck of the womb, and in amenorrhoea and leucorrhoea when originating either from general or local debility. In the two latter complaints the springs act as a true tonic. According to circumstances, I employed them either both inwardly and outwardly, or outwardly alone; in some cases I had recourse to the ascending douche and the local vapour-bath. I also found in some cases the ordinary douche, directed upon the loins and the abdomen, very beneficial. — Most patients, when arriving here, being, in consequence of the fatigues of their journey, in a state of excitement, and having a tendency to inflammation in the affected parts, the treatment must be directed very cautiously. At first most patients bear but a soothing mode of employing the waters, and it is, therefore, best not to begin with their inward use or with douche-baths, but to prescribe only plain baths and local vapour-baths. Later, when there is no inflammation to be dreaded any more, the inward use of the waters may be resorted to and douche-baths may be taken.

12. Scrofula.

The Aix-la-Chapelle springs have all the qualities requisite for an antiscrofulous medicine. They increase the vitality of the skin, animate the circulation, invigorate the muscular and nervous systems, assist digestion, accelerate the organic tissue change — virtues by which the springs are enabled to exercise a salutary influence on swollen glands, on scrofulous ulcers and swellings and on scrofulous affections of the skin and mucous membranes. In the cases which I attended, the improvement of the local lesions went on with the amelioration of the general health, effected by the use of the waters. I have also tried the springs in several cases of scrofulous affections of the

bones, but I am obliged to confess not to have obtained very brilliant successes, unless I added Kreuznach mother-lye to the baths, as I have done several times, especially in patients residing at Aix-la-Chapelle. Two cases of chronic periostitis which I observed in serofulous individuals, and which were perfectly cured, would form an exception, if I had not reason to admit that the periostitis was rather of a rheumatic than serofulous nature.

13. Metallic cachexies.

The waters are not to be considered as an antidote in a case of poisoning by a strong dose of mercury or lead, but they constitute a sovereign medicine in cachexies, arising either from a long lasting contact with either of these metals or from a badly regulated use of them. Thus, it is not astonishing that we see here every year a great number of persons, who are suffering more or less from having lived in an atmosphere impregnated with lead-dust or from having drunk water containing lead, and of persons labouring under the ill consequences of an irregular course of mercury.

The symptoms which I observed on those who visited these springs in order to be cured from the consequences of poisoning by lead were: Torpid digestion with want of appetite and metallic taste, and a paralysis of the upper extremities, now and then complicated with an affection of the digestive organs. In two patients I observed a tendency to bronchitis. Several suffered from colics. All the patients I saw were greatly emaciated. — The inward use of the springs, generally agreed with them very well. In colics plain baths, in paralysis douche-baths were preferred. In one case of obstinate colic, where the skin was very dry, I had recourse to vapour-baths, which acted most beneficially. The salutary effects of the springs sometimes appeared so quickly, that it surprised both the patients and myself. I could quote several instances of

this, but the progress of the recovery not being marked by striking incidents, I am the more justified in omitting them, as the efficacy of our springs in these complaints is generally known.

It is a well ascertained fact, that a too protracted mercurial treatment, a neglect of the necessary regimen, or a cold taken while the patients are under the influence of mercury, is frequently followed by serious consequences. Those which I observed on the visitors of these springs, were ulcerations or swellings on the gums, on the tongue and in the throat, dyspepsy, neuralgy, paralysis, nocturnal pain in the bones, flying pains in the fibrous tissues, increasing on sudden changes of the weather.

The cure is the more easily effected by the waters, when the mercurial cachexy is not complicated with an other disease; but even in a complicated case, the cure is facilitated by the use of the waters, because they take away the mercurialism which, as long as it exists, is an invincible obstacle to any treatment which might be resorted to against the coëxisting malady. The use of the sulphureous springs in mercurial cachexy is scarcely ever marked by fever. Nearly all patients whom I saw, became gradually better after having used the waters a short time; and the improvement, after it had once begun, did not fail to make a steady progress towards perfect recovery. In some rare cases the improvement of the infirmity is observed to come on with a salivation.

Case 25. Mr. Z, an officer in the Russian army, ætat. 43, was attended by me in 1844. Two years before he had a venereal infection, for which he took large doses of mercury without following a proper regimen. A cold, which he caught while under the influence of mercury, brought on a paralysis of the right arm, which resisted all treatment. I found the limb emaciated. Its movements were not utterly impossible, but they were incomplete and effected with great difficulty. The forearm was in a state of half-flexion. All action, principally supination, was accompanied by great shaking. The patient, it is true, was still able to write a few lines, but when doing so he was obliged to make the

greatest efforts to keep his shaking hand on the paper. He had a strong constitution and enjoyed excellent general health. His digestion was good, sleep sound, and there was no determination of blood to the head. He began drinking and bathing July 30th and took simple sulphureous and sulphuretted vapour-baths up to 16th of August, when, all on a sudden, without any precursory symptoms, a profuse salivation with slight nleeration on the gums, made its appearance. The salivation continued with the same force for four days and then gradually abated, till with the eleventh day it perfectly disappeared. During the whole time the patient was less tormented by the salivation than by an almost intolerable thirst. But the most interesting, and, at the same time, the most fortunate incident was, that from the first beginning of the salivation the patient had a greater facility in moving his hitherto lamed arm. This improvement daily increased, and when the salivation ceased, the patient was able to move his arm in every direction, though he felt it still weak. — While salivating he had not left his room and had only made use of the waters for gargling and for cleansing his mouth. Perhaps it was owing to this proceeding, that the ulcerations on the gums never gained such an extent as might have been expected from so profuse a salivation. He began drinking the waters again August 28th, and the douche-baths, which I now ordered him, contributed much to strengthen his arm. At the end of one week the patient had so far recovered, that he could write with a steady hand, and even shave himself. He left September 10th.

To all persons suffering in consequence of mercury, it is important to increase perspiration, and I therefore recommended vapour-baths to almost all of them, though without neglecting the other modes of employing the waters. These patients generally bear the waters very well, even in large quantities. The strongest doses which I gave to a patient and which were persisted in for an unusually long time, were taken in the following case of a most painful hypertrophy of the tongue caused by mercury.

Case 26. Mr. A., an English gentleman, aetat. 36, of a very strong constitution, had taken enormous doses of mereury for a syphilitic affection which he had caught twelve years before. He had been cured from syphilis, but the salivation brought on by the mercury had left a swelling of the tongue. Unfortunately this affection was looked upon as of a venereal kind, and the patient was repeatedly submitted to courses of mercury, which only made him worse. When he arrived here July 11th 185..., I found his tongue very large and thick with

deep impressions of the teeth on its edges. He complained of horrible pain in his tongue, and declared that for years he never had felt free from it for one hour. Digestion and appetite were good. The patient was not able to think of anything but his unfortunate condition, and was constantly brooding on his ailment, its causes and the medicines which he had taken. He was advised to drink the sulphureous water and to take simple sulphureous, as well as vapour-baths. The dose of the water to be drunk was gradually increased to about four pints, but as soon as the patient began to perceive a little change for the better, he increased his allowance on his own account, and I was obliged to warn him repeatedly against too strong doses. The improvement was constant but slow, and the patient had perseverance enough to continue his course till all remains of the disease had disappeared. The treatment which was only interrupted by a few short excursions, which I now and then advised the patient to make, was continued until May of the following year, when the patient found himself perfectly well. He had taken a hundred and fortyseven simple sulphureous baths and seventy-one vapour-baths. It is fortunate that few patients are in need of so long a treatment, as such perseverance may seldom be met with.

With regard to the effects of the sulphureous springs in other metallic cachexies than saturnine or mercurial, I have not made any observation, except in the case of one patient, who had formerly been manager of a fabric of Scheele's green in America. In consequence of chronic poisoning through arseniate of copper, swellings of both parotid and of several lymphatic glands had come on, and red spots had appeared on several parts of the body. Though the swellings had for a great part disappeared under a treatment which he had undergone in Germany, previously to his coming to Aix-la-Chapelle, a great many spots were still present. The inward and outward use of the springs in the summers of 1856 and 57 dispersed what was still remaining of the swellings, removed the spots, and had the best influence on the general health of the patient, who left Aix-la-Chapelle perfectly well.

14. Syphilitic affections.

The cases of syphilis which indicate the use of the Aix-la-Chapelle sulphureous springs, are especially those

which have not been relieved by mercury, whether given alone or followed by a course of iodide of potassium. It seems that some forms of syphilis and some constitutions do not bear the use of mercury, and it is almost generally admitted, that even those affections which yield to mercury, when properly employed, are aggravated by its injudicious use or by carelessness on the part of the patients when under its influence. We must especially point out the cold air to which they expose themselves, as the source of the serious and obstinate sufferings which, but too often, follow a course of mercury. These sufferings become worse and worse when the medical attendant instead of discontinuing this medicine, persists in its use. The illness then frequently appears under such symptoms, that it is difficult to tell whether we have to do with a syphilitic or with a mercurial complaint. In some other cases the symptoms are so very slight, that the medical attendant is lead to attribute the repeated complaints of a sometimes troublesome patient, to imagination. Under these circumstances the Aix-la-Chapelle waters are of the greatest service. For, if the patient is only labouring from the ill consequences of mercury, the waters effect a speedy cure, whereas, when there is syphilis still in the system, though not manifesting itself by distinct symptoms, it becomes apparent through the use of the waters.

Case 27. Mr. B., a Russian officer, came to Aix-la-Chapelle in the summer of 185... Two years before this time he had contracted a chancre, followed soon afterwards by secondary symptoms, a roseola, and sores in the throat, from which he was freed by a mercurial treatment. Since that time he constantly complained of a disagreeable sensation in the throat. He consulted a great many members of the profession, who all declared to him, that they could not discover the slightest affection, and that the sensations in his throat were only owing to his fears. At last he was directed to try the Aix-la-Chapelle waters, as a test of syphilis. On his arrival here, the physician whom he consulted, could not discover the slightest affection in the throat nor anywhere else. The patient drank a good quantity of the waters and took simple

sulphureous and vapour-baths. But though he still went on complaining about his throat, his medical attendant did not find anything wrong. Under these circumstances, I was requested to meet his doctor in consultation, but neither could I perceive any morbid symptoms in the throat. So we agreed that the patient should go on with his course, and that we should visit him again a week later. At this second visit we noticed a sore on the right amygdala, which bore all the characteristic symptoms of a venereal ulcer. Being convinced, now, of the true nature of the complaint, we did not delay any longer to submit the patient to a strict antisyphilitic treatment, by which he was completely cured in seven weeks.

Case 28. Mr. C., a Russian gentleman, aetat. 38, arrived here in June 185... He had frequently suffered from venereal affections, both primary and secondary and had taken large doses of mercury and of iodide of potassium. His constitution was strong and his general health good, except that he had been suffering for several years from urticaria, which, especially at night, was very troublesome and disturbed his sleep. He employed the waters both internally and externally, but felt no relief at first. Eighteen days after the beginning of his course, two small boils appeared on his right arm, which gradually began to show the character of true syphilitic ulcers. I therefore did not delay prescribing iodide of potassium, which he took in the dose of four grains twice a day in a tumbler of eight ounces of sulphureous water for four weeks, at the end of which his urticaria as well as his ulcers were perfectly cured.

Case 29. Mr. D., an English gentleman, aetat. 25, arrived here April 29th 185... Three years previously he had caught a chancre, in consequence of which various symptoms of secondary and tertiary syphilis had shown themselves. After having gone through several courses of various mercurial preparations and having taken iodide of potassium, he felt himself free from affections of the bones, and all ulcers but one were healed. This one, situated on the back of his left leg, just above the heel, obstinately resisted all attempts to cure it. When the patient arrived at Aix-la-Chapelle, this sore was of the size of a sixpence, was flat with lacerated edges, and discharged a light yellowish serous liquid in a small quantity. — The patient began his course directly by drinking and bathing. After one week's treatment the sore gained a more healthy appearance, but this improvement made no further progress, on the contrary, three weeks after the patient's arrival the sore became larger and exhibited, now, a real syphilitic character. The patient having a great objection to iodide of potassium, which he pretended had done him

harm before, could be prevailed upon to take it only in very small doses — two grains twice a day — each dose in eight ounces of sulphureous water. — Besides these sixteen ounces of water combined with iodide of potassium, he took several tumblers of pure sulphureous water, and went on bathing. This treatment showing immediately its good influence upon the sore, the daily dose of iodide of potassium was increased to six grains. The improvement went on progressing and the patient left at the end of June perfectly cured. Several years afterwards I happened to meet him in London, and understood that since his departure from Aix-la-Chapelle he had been constantly well.

Case 30. Mr. E., a Russian gentleman, *actat.* 30, arrived at Aix-la-Chapelle towards the end of August 185... He had been infected five years before, and the secondary and tertiary symptoms which had followed, had yielded to iodide of potassium, a hydropathic treatment and the use of mercury. Three years afterwards a violent headache, principally on the left side, came on, which was followed by a paralysis of the right leg and arm and a deafness of the right ear. His memory became deficient, and deglutition and respiration difficult. These sufferings increasing constantly, a relation of the patient went with him to Germany, in order to consult a celebrated physician, of whom he had heard. This gentleman diagnosticated a syphilitic affection of the brain, and prescribed the use of the Aix-la-Chapelle springs. — The patient was strongly built, of middle size, had a short neck and a large head. Digestion good. Pulse small and hard. The right arm and the right leg were completely paralysed, the latter already greatly emaciated; the deafness of the right ear was so great that the ticking of a watch laid upon it was not perceived. With the right eye, the pupil of which was enlarged, the patient could perceive only the outlines of larger objects. The patient was frequently troubled by hiccough, deglutition and respiration were uneasy. The uvula was greatly elongated and thickly swollen. The memory was very weak. The patient often made use of words which had quite another signification than what he wished to convey. This happened to him indiscriminately whether speaking Russian or French. He was free from headache. He began with drinking eight ounces of mineral water, and bearing this well, the dose was gradually increased. He had continued drinking the water for ten days, when the pulse became full and strong, appetite began to fail, and constipation, increased thirst, and headache, principally on the left side, came on. Use of the water suspended; aperients; leeches behind the left ear. The fever soon ceased, and the headache was allayed. The patient continuing to observe an antiphlogistic diet and to keep quiet, he at last became free from headache in the day time, but it came back in the

evening and lasted long after midnight, till the tormented patient at last fell asleep. This periodic reappearance of the headache permitted of no doubt as to the syphilitic nature of the cerebral affection. In accordance with this I prescribed iodide of potassium to be taken twice a day in mineral water. This treatment acted beneficially, for the headache left and the memory improved, but though it was continued for four weeks, it had no visible effects on the paralysis, the deafness of the right ear, and the impaired sight of the right eye. The medicines having been left off for a few weeks, in order to ascertain better the result of the treatment, the state of the patient became worse than before. Iodide of potassium combined with mineral water was prescribed again, and an alleviation of the headache and some improvement of the memory followed. But when this improvement made no further progress after these medicines had been continued for some time, I decided on having recourse to the use of mercury. The patient had, now, to take a dose of iodide of potassium in mineral water early in the morning on an empty stomach, which dose was repeated several hours after breakfast, and bichloride of mercury after dinner. This treatment was followed by such brilliant success that, eight weeks later, the paralysis of the right leg and arm was perfectly cured, the right ear was so far recovered, that the patient could perceive the ticking of the watch at the distance of a foot, the sight was improved and the memory completely restored. The swelling of the uvula was not diminished. The improvement of the hearing went on progressing after all treatment had been stopped, so that in May of the next following year the ear, which had been perfectly deaf before, could perceive the sound of the watch at two feet's distance. The muscles of the leg which had been paralysed before had, by frequent exercise, gained in bulk. In the summer which followed, douches were first employed to invigorate the leg. When after a repeated inward and outward use of the waters no symptoms of syphilis reappeared, I ventured to remove the last remains of the disease by cutting off a part of the uvula which through its swelling and length formed an impediment to deglutition and respiration. The patient left at the end of the summer in perfect health. About a year after his departure I heard from him that, with the exception of a new chancre, acquired in the last days, he had continued to do well.

By this virtue of the Aix-la-Chapelle waters to serve as a test to latent syphilis, confirmed as it is by numberless observations, a great many persons are induced to try these springs, who, though perfectly well, are desirous to obtain a certainty, whether their systems are free from sy-

philis or not. As syphilis sometimes remains a long time in the system without showing itself outwardly, a certainty about their real state of health, is often of great importance to individuals who, formerly, were infected, especially to those who wish to enter into matrimonial bonds.

Besides thus assisting us in forming a sure diagnosis in dubious cases, the Aix-la-Chapelle waters are also a great auxiliary in the cure of inveterate complicated syphilis.

Before the effects of iodide of potassium in syphilitic affections were known, it was considered necessary to submit the patient to a new mercurial treatment, as soon as it was ascertained that he was still labouring under syphilis, and several cases are recorded, in which mercury then employed, either alone or simultaneously with the water, was of the greatest service. Since the iodide of potassium has become known as an antisyphilitic medicine, I have since 1839 (in which year I first employed it in combination with the waters) had recourse to it in most of the cases in which I considered the waters, by themselves, insufficient to eradicate the disease. The iodide of potassium is, by itself, a powerful medicine in syphilis which has not yielded to mercury, but it is still more efficacious when combined with the Aix-la-Chapelle waters. I have treated, in the last twenty two years, a great number of patients who had taken iodide of potassium in *large doses*, previously to their coming to Aix-la-Chapelle, without deriving any benefit from it, but who were completely cured by the simultaneous use of the waters and the iodide of potassium in *small doses*. I generally prescribe a dose of three to four grains to be taken in eight ounces of mineral water, which, according to circumstances, is to be repeated once or twice in twenty four hours. The patients almost always bear this mixture without any inconvenience. The affections of the mucous membranes of the nose and throat, which are frequently brought on

by iodide of potassium, when given alone, are very seldom observed when this medicine is taken with the waters. I cannot speak highly enough of the results of this treatment, and the reader will no doubt concur in this favourable opinion, after the persual of the following pages.

Case 31. Mr. F., *actat.* 26, a Belgian merchant, caught a venereal infection in February 1841, for which he took mercury. Some time afterwards secondary symptoms appeared under the form of a *roseola* occupying chiefly the chest, the arms and legs. Mercury was taken again followed afterwards by iodide of potassium, but the case became worse and worse. So he came to Aix-la-Chapelle in the month of June. He first consulted a physician, who had settled at Aix-la-Chapelle but a short time before, and who happened to be a great advocate of mercury. This gentleman declared to the patient, that the Aix-la-Chapelle waters could but do him harm as the syphilitic virus was still in the system, and that he could only be cured by mercury. The pills of corrosive sublimate, which he accordingly prescribed and which were taken for four weeks, proving to be of no avail, and the symptoms gradually becoming worse and worse, the doctor declared, that the corrosive sublimate was apparently to weak a preparation, and advised mercurial frictions combined with starving diet. But the patient happening to become acquainted with a case similar to his own, in which I had effected the cure without mercury, left his medical attendant and requested my advice. I found the chest, arms and legs covered with an immense number of red spots, varying in size from the circumference of a sixpence to that of half a crown. On most of the spots thin brown scales had formed, but there was no ulceration. The general health of the patient was good, his digestion and sleep excellent. — I advised him to drink the waters and to take common sulphureous baths and sulphureous vapour-baths on alternate days. A nourishing diet was ordered. The patient began his course July 10th, and but a few days afterwards some improvement was already perceptible. But this improvement made but slow progress and, at last, came to a perfect standstill, so that on the 26th I prescribed two doses, of four grains each, of iodide of potassium, to be taken daily in sulphureous water. The progress now became so rapid, that all the spots had completely disappeared by the 20th of August, when the patient left Aix-la-Chapelle in perfect health. I saw this gentleman again eleven years afterwards, in 1852. He then came here to be cured of a chronic rheumatism, which he had contracted in the autumn before, when travelling in Russia. Since his cure in 1841 he never had been troubled

by any symptom of syphilis. After a few weeks stay at Aix-la-Chapelle, he left free from his rheumatism and in perfect health.

Case 32. Mr. G., surgeon to a man of war, caught a chancre when on station in the East-Indies in 1845. He took mercury, but before the cure was finished, the ship made sail, and the patient, anxious to conceal his complaint, continued his treatment but very irregularly. A few weeks later a syphilitic roseola appeared, for which, after his arrival in Europe, he underwent a regular course of mercury. The eruption faded away, but some months afterwards the patient was alarmed by the sudden appearance of a node on his left tibia accompanied by nocturnal pain. He now took iodide of potassium and was soon relieved of his swelling and freed from pain. But the next following year a relapse came on, the exostosis reappeared with more severe pain than ever. This time the iodide of potassium procured but tittle relief, which induced the patient to obtain leave to go to Aix-la-Chapelle. After having taken the waters a fortnight, without being benefitted by them, he called on me. The gravity of his sufferings was painted in his sickly look. He was suffering constantly from pain in the left tibia and in the right ulna, which became so intense towards evening as to be almost insupportable. On the left tibia I found an exostosis of the size and form of a pigeon's egg. His appetite was good, his digestion regular and the circulation normal. I advised him to take three doses of iodide of potassium a day, of four grains each, in eight ounces of mineral water, and vapour-baths alternately with simple sulphureous baths. The patient had scarcely undergone this treatment for five days, when the pains were greatly mitigated. Going on with it for three weeks longer, during which the improvement made constant progress, he found himself at last perfectly free from pain and from his exostosis, and left in perfect health. According to the last news, which I had from him in 1855, his health had not been disturbed since his departure.

Case 33. Mr. H., an English gentleman, *ætat.* 32, of an athletic constitution had suffered for a long time from syphilis, for which he had taken mercury first, and large doses of iodide of potassium afterwards, without deriving the slightest benefit from these medicines. He arrived here October the 4th 1851. His head appeared almost totally bald; nearly the whole of the upper surface was covered with thick and hard crusts of a blackish grey colour, bearing a close resemblance to oyster-shells, leaving but very few and small interstices between. A yellowish liquid of a most offensive smell oozed from beneath the edges of the crusts. The whole exhibited all the characters of a genuine syphilitic rupia. At the lower extremity of the left tibia was an exostosis of the

size of a large almond, the seat of violent nocturnal pain. The patient declared he had latterly lost very much of his strength. Digestion, appetite and circulation were satisfactory. I prescribed four grains of iodido of potassium, this dose to be taken three times a day in eight ounces of mineral water, besides some other tumblers of pure mineral water. Vapour-baths alternated with plain baths. Rags of old linnen, wotted with the mineral water, were applied on the sores during several hours in the day. In the intervals the sores were dressed with cerat upon lint. This treatment was followed by a speedy and fortunate result for, eight days later the pains had ceased. The crusts having fallen off in less than a fortnight, flat ulcers, almost confluent, were seen covering nearly the whole top surface of the head with a greyish inert base without granulations, secreting a sero-sanious liquid. From this time I could perceive a change for the better gaining more and more ground from day to day. The basis of the ulcers gradually gained a more lively colour, the secretion became healthier and the progress was so rapid, that the patient could leave the 2^d of December, completely cured. Though he felt perfectly well, he returned to Aix-la-Chapelle in the June of the following year, wishing to consolidate the effects of the first treatment by a second course. This time no other medicine but the mineral water was prescribed. He took the waters for one month, and his course went on regularly without being troubled by any incident. According to the last news I had from him nine years later, in 1861, he was still doing perfectly well.

Case 34. Mr. J., an officer in the English army, aetat. 26, had caught a chancre in 1852. He was attended by eminent medical men, who made him go through several courses of mercury and prescribed afterwards iodide of potassium. But all treatments seemed to fail, and in the course of two years his disease attained a frightful degree. At last he was directed to go to Aix-la-Chapelle, where he arrived on the 13th of July 1854. The patient was greatly emaciated, looked very pale and was so very weak, that he could scarcely walk for a few minutes. His pulse weak, 90 in the morning, 100 in the evening. There was no disposition to pulmonary diseases in the family. The upper surface of the head was covered with a thick rupia similar to that described in the case 9. There was also another rupia on the lower lid of the left eye covering, as it became evident some weeks afterwards, a lacrymal fistula with swelling of the lacrymal bone, and a third rupia on the left ala nasi going down over the lip to the angle of the mouth and spreading to the width of about four lines. On the right collarbone a large hard node was found, which caused violent nocturnal pain. -- I began with *one* grain of iodide of potassium, to be taken twice a day in three

ounces of mineral water. The patient being unequal to the fatigue of walking, was advised to drink his morning dose in bed, and his evening dose sitting in an armchair. Sulphureous baths of an agreeable temperature, of 15 minutes, were taken. The sores were frequently washed with mineral water and dressed with simple ointment. Nourishing diet. The patient bearing this treatment very well, the dose of the medicine and of the waters was gradually increased, till, at the end of three weeks, he daily took six grains of iodide of potassium and two pounds of mineral water, and remained half an hour in the bath. This treatment was continued for three months on the same plan, with the only alteration, that as soon as his increasing strength permitted it, he took the waters at the fountain, and that in the last four weeks of his stay he occasionally took a vapour-bath. When he left on the 15th of October, the node on the collarbone had entirely disappeared, and all ulcerations were healed up except the one on the eyelid, of which a small part was not yet healed, but which closed entirely about a fortnight after his departure. The patient had gained his strength again, and looked quite healthy. At the end of November Mr. J. felt so strong, that he could leave England to join his regiment in the Crimea. Though he remained there during the whole winter 1854 to 55, the following summer and autumn, and had a full share of all the fatigues of the Crimean war till the fall of Sebastopol, he never fell ill, and came back to England in perfect health. He was still enjoying good health in the summer of 1858, when I last heard from him.

Case 35. Mr. K., an English gentleman, aetat. 30, arrived here on the 14th of December 185... Three years before he had caught a primary ulcer, which soon afterwards was followed by secondary symptoms. These were subdued for a time by mercury, but soon reappeared to a greater extent. In the last six months previous to his coming here, several sores had appeared on his body and in the faec, a large swelling on the frontal bone and an ulcer on the palate. In spite of repeated courses of mercury, iodine, *Donovan's* liquor, prescribed to him by eminent members of the profession in England, his case became worse and worse. By the advice of a friend, whom I had cured here before of the same disease, the patient decided on coming here. He was a strong looking middle sized man, though he looked pale and bore the signs of syphilitic cachexia. His pulse was low; his skin of an earthy colour. Digestion good, sleep sound. There were three small ulcers just before the right ear, deeply excavated with lacerated edges formed by the reddened, thickened and hardened skin. The secretion was an unhealthy looking matter, forming thin crusts of a dirty yellowish colour. On the right side of the nose a few lines below the inner angle of the

eye, a deep ulcer was seated with hardened lacerated edges, and another ulcer occupied the right ala nasi, which, just one day before his arrival, had been so perforated by it, that it was perfectly divided in two triangular flaps. The edges of this sore were hard and lacerated. On the chest and on the back five ulcers were seated, varying in size from the circumference of a shilling to that of a crown. Just in the centre of the soft palate an ulcer formed a fissure, extending forwards a few lines under the union of the horizontal parts of the two ossa palati. Besides these sores there existed on the top of the forehead a large oval ulcer 15 lines high and 12 lines broad, showing the frontal bone on this spot denuded and rough. — I prescribed iodide of potassium, four grains to be taken three times a day in eight ounces of mineral water, sulphureous baths both plain and vapour. The wounds were dressed with simple ointment, and washed with mineral water. Plain nourishing diet. The patient who had taken lodgings in a bathhouse did not leave his room otherwise than for the purpose of going into the bathing cabinet. This treatment was followed by a rapid and complete success, for all the sores healed up in less than three weeks, except the one on the frontal bone, which, however, continued progressing so favourably, that January the 7th — the 23^d day since the commencement of the treatment the greater part of the morbid bone, a fragment of twenty lines in length and ten in breadth, could be removed. A few small fragments of carious bone came out on the following days, and now the healing process went on so rapidly, that the wound was perfectly closed on the 22^d of January. The patient left February the 6th perfectly cured. I saw him again in August of the same year, when he came to stay a few days in Aix-la-Chapelle with a relation of his. He was then in perfect health and required no further treatment. In the following year being in London I had again an opportunity of seeing him and found him still perfectly well.

Case 36. Prince L., a Russian, aetat. 34, arrived here June 18th 185... For several years he had suffered from syphilis, which had resisted all mercurial treatments and the repeated use of iodide of potassium in strong doses. On the pharynx I observed five small syphilitic ulcers. A thin watery liquid was constantly running from his nose, so that he needed from five to six pocket-handkerchiefs a day. The nose was reddish, painful and tender to the touch. By probing the nose, I could not discover any morbid bone. The patient began his course on the 16th. He took four grains of iodide of potassium, twice a day, in eight ounces of mineral water, besides some other tumblers of pure mineral water, and a simple sulphureous and a vapour-bath on alternate days; and later, after his strength had increased, a vapour-bath in the morning and a

simple bath in the evening. Nourishing diet. The ulcers on the pharynx healed completely in one week; the affection of the nose required a longer time, though the secretion diminished very soon after the beginning of the treatment. An abundant eruption of acne iodata, with slight irritation of the conjunctiva, appearing on the 15th day of the treatment, I diminished the dose of iodide of potassium to two grains bis p. d. On the 6th of July, the 21st day of the treatment, when blowing his nose, the patient discovered a small bone in his handkerchief which I found to be part of the lacrymal bone. From this moment the morbid secretion from the nose gradually ceased, and the patient could leave on the 9th of August perfectly cured. He had become much stronger, and looked perfectly healthy. Still, as he wished to gain still more strength, I directed him to go for some weeks to Spa, which he did. From Spa he went to stay for some months for his amusement at Paris. I saw him again when he passed through this place in the last days of October on his return to Russia. He declared he was perfectly well.

Case 37. Dr. M., a military surgeon from P., had suffered several times from ague, and various syphilitic affections. He had taken mercury and iodide of potassium, but very irregularly. Though no symptoms of syphilis had appeared for a long time, he gradually lost all strength, was frequently subject to intestinal catarrhs and was attacked by jaundice. A renowned colleague of his country found the spleen and liver swollen, and considering these swellings to be of syphilitic nature, sent the patient to Aix-la-Chapelle and recommended him to my care. He arrived here in June 1857. He was 32 years old, very thin, looked cachectic. The complexion and the conjunctiva of a yellow colour. The urine muddy, with pigment of bile. Pulse feeble and slow. On percussion the dull liver sound was heard over a great part of the epigastrium. The lower edge of the liver was distinctly felt. In the sternal line it stood about one inch and a half above the navel, and could be followed in a slanting direction up to the right. To the left of the linea alba the left edge of the liver came into close contact with the right edge of the spleen, which was also very much enlarged and descended deeply into the epigastric region. The liver was felt very solid and offered great resistance to the touch. Its surface was not marked by any eminences or hollows. The patient was suffering from an intestinal catarrh, which had already lasted for some time. — The intestinal catarrh having been stopped, after a few days, by small doses of opium, the patient began with one grain of iodide of potassium in four ounces of mineral water, bis p. d., and finding relief from this treatment, the dose was gradually increased, so that he took at last six grains of iodide of potassium and drank two pounds of mineral water. The patient's strength having in-

creased a little, a bath was taken every other day. The jaundice disappeared in the first three weeks; the digestion became good; the patient daily gained in strength and his looks improved visibly. The size of the liver and spleen gradually diminished, so that six weeks from the beginning of the treatment, the lower edge of the liver was more than three inches distant from the navel, and the spleen exceeded the ribs by about two inches only. Though the general health had become excellent, digestion, sleep and circulation were perfectly sound, and the strength daily increased, there was, nevertheless, no further decrease of the swollen organs perceptible in the following fortnight. For this reason, the patient wished to try, how the Vichy waters would act on the remains of the disease. At a consultation which I had about this with a countryman of his, a physician who at that time was staying here, we agreed on sending him there. He remained four weeks at Vichy. I am not informed whether the Vichy waters have effected a further decrease of the morbid swellings. I only know by a letter which I received from his wife three months after his departure from Aix-la-Chapelle, that he had continued to be well; and I have not received any further news of him since.

Professor *Frerichs* at Berlin, who had the kindness to recommend me a patient, similarly affected with waxy degeneration of the liver, describes his case in his classical work on the diseases of the liver*) as follows:

Case 38. Mr. J., captain of the navy from P., had repeatedly taken mercury for secondary syphilitic affections; red oxide of mercury, bichloride, mercurial frictions, iodide of mercury had been irregularly used, without proper diet. The patient, when he called on me, was suffering from pseudo-rheumatic pains, the ulcers in the pharynx were healed, but an obstinate gastro-enteric catarrh existed for several weeks, and a jaundice accompanied by a painful swelling of the liver had developed itself. The liver measured in the mammillary line 16, in the sternal line 10 centimetres; the spleen was considerably enlarged also. I sent the patient to Aix-la-Chapelle, where Dr. *Wetzlar* removed the gastro-enteric catarrh by a chalk mixture with opium, and then first employed the baths and afterwards the internal use of the water with iodide of potassium. After a treatment of four weeks the jaundice had passed and the liver had gained its normal size, while the pseudo-rheumatic pains were almost entirely gone.

*) Klinik der Leberkrankheiten etc. 2 vol. p. 185 f. case 25.

In a case of syphilitic waxy degeneration of the liver, treated by me some years previously to the two cases mentioned, the mineral water combined with iodide of potassium, had but very little effect, which was perhaps owing to the irregular mode of life which the patient led during his course. For a fourth case, treated by me in 1860, see case 39, fol. p.

I could record a *greater* number of similar cases cured by the same treatment, but it will be sufficient to state, that I have obtained through it, great success in syphilitic affections of the sternum, of the ribs, of the armbones, of the tibia and femur, of the scull, in several cases of chronic syphilitic iritis, in the two cases of waxy degeneration of the liver, just recorded, and in skin diseases of more or less extent and under various forms. Most of the patients whom I was fortunate enough to cure by this treatment, had taken iodide of potassium in larger doses, than prescribed by me, previously to their coming to Aix-la-Chapelle. Though I cannot speak highly enough of the results of this treatment, we should be wrong in *always* expecting to meet with such success. Just in the same manner as in cases, in which no mercury has been previously used, the iodide of potassium, given without the Aix-la-Chapelle waters, scarcely ever effects a permanent cure of syphilis, so the combination of this medicine with the mineral water is without avail in the cases of such patients, who have not previously taken mercury. The iodide of potassium with the waters generally fails also when prescribed to such patients, upon whose constitutions mercury has not made sufficient impression. So I have generally found, that where mercury had brought on a diarrhoea, or where salivation had come on too suddenly, the iodide of potassium with mineral water does not effect a complete cure. In such cases I was obliged to have recourse to mercury again, and I have ascertained, by repeated observation, that mercury given during a course of

sulphureous waters, *maintains all its specific power in syphilis*, being at the same time free from all disagreeable or injurious consequences. In cases of this sort I generally ordered the patients to drink the waters (either pure or, according to circumstances, with iodide of potassium) and to bathe in the morning and take mercury in the evening. The patients with whom this course of treatment was adopted, were cured without salivation though in some cases the gums became slightly affected for a short time. Having succeeded in most cases of inveterate syphilis by the combined use of the waters and iodide of potassium, I have, consequently, been obliged to have recourse to mercury in but comparatively few cases; but the results of the latter treatment, whenever I was forced to resort to it, were so remarkably favourable, that I consider myself justified in establishing it as a general rule, that where iodide of potassium combined with the waters fails to effect a cure, mercury should be employed. The mercurial preparation which is to be employed, varies according to circumstances. I have had recourse to either bichloride, or calomel or iodide of mercury or Plummer's pills, just as each individual case seemed to require it.

Case 39. Mr. O., an English officer, aetat. 28, came to Aix-la-Chapelle in 1860, to seek relief from violent pains, which he considered to be rheumatic, in his back, his right arm and left tibia. The patient was emaciated, looked pale; the conjunctiva had a yellow hue. He had little appetite, his bowels had been constive for a long time, and the patient was in the habit of taking aperient pills, but which, latterly, had scarcely any effect. Pigment of bile in the urine. On examining the parts which were the seats of pain, I found in one place several small ulcers, covered with crusts of a dirty grey colour, bearing the characteristic symptoms of syphilitic rupia. There were no swellings on the bones. The liver had 9 centim. in the sternal line, and 15 in the mammillar. The patient positively denied having ever been infected with syphilis. The ulcers, he said, originated from irritating embrocations, and the swelling of the liver was probably owing to a four years' stay in the East-Indies, from which he had returned but three months ago. The patient, who appeared to be in very low spirits and was perhaps

annoyed by the many questions I put to him, declared he knew it for certain, that his ulcers would heal as soon as he were to leave off the use of the embrocations, and that he had come to Aix-la-Chapelle only for the purpose of being freed of his pains, which were so violent that he was tired of his life. I prescribed the inward use of the waters, plain and donche-baths, and told him to continue his pills. But his state not improving, his pains continuing to torment him day and night, and the ulcers showing no tendency to heal, I, eight days later, repeated my question about a venereal infection. This time, he recollected, that more than four years ago, shortly before his voyage to the East-Indies, he had a small sore on the membrum, but that his medical attendant had declared this sore not to be syphilitic, and had healed it by local medicines. He never had taken mercury, he said, nor would he take it now, as he was satisfied of not being syphilitic at all. He consented, however, to take iodide of potassium and took four grains of it in mineral water — his p. d. — during a fortnight. But finding no improvement after this time, he became more willing to admit the correctness of my views on the syphilitic nature of his complaint. He now took iodide of potassium in mineral water early in the morning, bathed afterwards, and took bichloride of mercury after dinner. This treatment was followed by a rapid improvement. The pain in his limbs and back gradually ceased, the ulcers healed, the swelling of the liver gradually decreased and at last disappeared, the yellow coloration of the conjunctiva faded away, the appetite became good, the digestion regular so that he could do without aperients; the patient gained in strength and looked well, and he who always had been cross and taciturn before, became cheerful and talkative. Five weeks after he had first begun taking mercury, he left in perfect health.

Case 40. Mr. P., aetat. 26, a Dutch merchant, arrived here August 5th 185... Fifteen months before he had caught a chancre, which was soon followed by secondary symptoms. He was then submitted to a course of mercurial frictions, and the symptoms disappeared. But though the frictions had been continued for nearly eight weeks, a few months afterwards symptoms of syphilis reappeared. This time iodide of potassium in large doses was resorted to, and the patient was apparently cured. But the cure did not last, and in summer 185... plaques muqueuses on the lips and ulcers in the throat appeared. These symptoms obstinately resisting all treatment, the patient was sent to Aix-la-Chapelle. He had a good constitution, though he showed symptoms of anaemia. His digestion was good, his sleep sound. On both lips, as well as on the inner side of the cheeks, there were several large plaques muqueuses and two syphilitic sores on the pharynx. I advised him to

drink the waters and to bathe and take plain but nourishing food. When, after one week's treatment, I saw no improvement, I prescribed iodide of potassium to be taken with the waters. This directly made a good impression upon the sores, which gained a more healthy appearance. But this improvement did not last very long, and when I was satisfied that this treatment would have no result, I changed it. The 28th August the iodide of potassium was discontinued, and the patient had to undergo the following treatment. In the morning he drank the waters and bathed — alternately a plain sulphureous bath and a vapour-bath — and in the afternoon he took mercury in small doses. Though the dose of mercury was gradually increased, no salivation nor any other disagreeable accident from the medicine occurred. The nourishing diet, chiefly animal, was continued. This treatment answered so well that, three weeks afterwards, the patient was completely cured. The dose of mercury was now gradually diminished and the treatment was continued up to the 15th of October, when the patient left in perfect good health. Not only all symptoms of the disease had vanished, but the patient had gained strength, and looked perfectly well. I am informed that his health has not been impaired since.

Case 41. Mr. Q., a French Gentleman, *ætat.* 31, had been infected several times, but had been free from all symptoms of syphilitic disease, when all on a sudden in January 185... several nodes on both tibias and on the left ulna appeared, which were accompanied by excessive nocturnal pain. He was submitted to a treatment of protoiodide of mercury and to the use of iodide of potassium. The patient was greatly relieved, for though the swellings did not completely disappear, the pain ceased for some months. But this relief did not last very long, for, towards the end of May, the nodes became tender again and increased in size. So he was sent to Aix-la-Chapelle, where he arrived June the 5th. I found his general health unimpaired, and no other symptoms of any disease but two large nodes on the right tibia, one on the left, and a large node on the left ulna, accompanied by violent nocturnal pain. I prescribed iodide of potassium to be taken in mineral water and plain sulphureous baths alternately with vapour-baths. This treatment answered so well, that all the nodes completely disappeared, and the patient left on the 16th of July apparently well. But he had scarcely been at home a week, when sores appeared on the lips and in the throat, and a node formed on the left ulna. These symptoms growing worse and worse, he came back to Aix-la-Chapelle August 7th. I found three plaques muqueuses on the lips, a flat syphilitic ulcer on the soft palate, a similar one on the pharynx and a gummatous swelling on the ulna. I prescribed, for the morning, a dose of iodide of potassium in

a tumbler of mineral water, followed by several other tumblers of pure mineral water, afterwards a bath (alternately plain and vapour-bath) and, three hours after breakfast a second dose of iodide of potassium in mineral water. In the evening he took small doses of mercury. During this treatment, which proved highly beneficial, the dose of mercury was first gradually increased, and when the sores had begun to heal, diminished. The recovery made rapid progress, so that the patient, who had felt quite well for more than a week, left on the 10th of September. It was contrary to my wishes that he should leave so soon, but he could not prolong his stay, and I must confess that I maintained great fears for the ultimate result. Fortunately my apprehensions were unfounded, for, as I heard about three years later from the patient himself, who paid me a visit when passing through Aix-la-Chapelle, his health had not since been disturbed in any way.

Case 42. Mr. R., an American gentleman, aetat. 30, came to Aix-la-Chapelle in September 185... The year before he had contracted an infection, which had been followed soon afterwards by constitutional syphilis. He took mercury several times, but irregularly, but neither this medicine nor the iodide of potassium which he took afterwards, was of any avail to him, and his case became worse and worse. After his arrival in Europe he was advised to try the Aix-la-Chapelle waters. — The patient had a good constitution and there was no hereditary disposition to pulmonary affections in his family. His digestion and circulation were good, but his strength had given way, so that he could scarcely walk for a few minutes. He had a large exostosis on each tibia, and a similar one on the right ulna. All the affected bones were excessively painful, especially at night time, so as to entirely deprive the patient of sleep. A thin reddish liquid of a most offensive smell, constantly oozed out of his right nostril, and by the probe introduced into the nasal cavity, I discovered that the back part of the horizontal portion of the right palatebone and several parts of the conchae were attacked by caries. On the right side of the hard palate, almost in its centre, a small ulcer was visible, forming an aperture of the size of a pin's head, which allowed of the introduction of the probe into the right nasal cavity. On the pharynx a large ulcer was seated, about ten lines in width. Its longitudinal dimensions could not be ascertained, as its upper and lower edges were out of reach of sight. Notwithstanding this immense ulceration, deglutition was not very difficult. — The patient was advised to take iodide of potassium with the water, twice a day, and to alternate with simple and vapour-baths. An improvement was visible even after the first week; the osseous swellings diminished in size and became less painful, and the ulcer gained a more healthy appearance.

This change for the better went on incessantly for about four weeks, but then, all on a sudden, all improvement stopped. I then prescribed small doses of mercury, to be taken after the last meal, the patient continuing to take the waters and the iodide of potassium before dinner. This new treatment proved so successful, that about the end of December all swellings of the bones had completely vanished, the ulcer on the pharynx was healed, and even the small aperture in the hard palate was closed. A few carious bones from the nose, had come off, but a small necrotic fragment of the horizontal part of the right palatebone still remained. When the patient left, in January, to go to the south of France, he enjoyed perfect general health, and looked admirably well. He came back to Aix-la-Chapelle eight months afterwards and, though no trace of the former disease was left, — the fragment of the palatebone had been thrown off long ago — took the waters again for three weeks, at the end of which he left in perfect health.

Having obtained so much success in following the methods just described of treating inveterate syphilis, viz. by the combination of the waters 1. with iodide of potassium, 2. with mercury and 3. with mercury and iodide of potassium, I consider myself justified in regarding them as most efficacious and as offering the greatest guarantee against relapses, and in preferring them to all other methods of treatment. Still, a few words are to be said about two other medicines, which, under certain circumstances, may be resorted to, either the *iodide of iron* in combination with the waters, or the *Zittmann decoction* as a preparatory treatment to their use.

The *iodide of iron* is an excellent medicine to begin with, where syphilis is complicated with great anaemia, but its efficacy in syphilis is by no means to be compared to that of the iodide of potassium. For, whenever, to anaemic patients, I prescribed iodide of iron either in pills or in syrup, I was always afterwards, notwithstanding, obliged to have recourse to iodide of potassium, for the iodide of iron never effected a complete cure. Therefore I am of opinion now, that its use should be limited to a small number of exceptional cases.

The *Zittmann decoction* is considered by many physicians to be a powerful antisyphilitic medicine. I myself, formerly, entertained a high opinion of its efficacy, but later experience has taught me, that it is far from being a *suro* medicine in syphilis. There is no doubt, that the *Zittmann* treatment stops the progress of the disease, when rapidly proceeding on its destructive path, but it will seldom effect a complete cure, and it ought therefore to be considered only as a preparatory treatment. Accordingly I prescribed it to several patients who arrived here with frightful phagadenic ulcers, but even when I succeeded in arresting the rapid and dangerous progress of the disease, I was frequently obliged to have recourse to other means afterwards in order to effect a complete cure.

CHAPTER IV.

Counter-indications to the use of the Aix-la-Chapelle springs.

Having in various parts of this treatise, already had occasion to point out the cases in which the Aix-la-Chapelle waters may be considered injurious, it is not necessary to devote great space to the chapter treating of their counter-indications.

The *internal use* of the waters is, generally speaking, counter-indicated by the following morbid states:

1. Fevers; 2. acute inflammations; 3. general plethora; 4. active congestions to the brain, and lungs; 5. tubercles; 6. diseases of the heart*); 7. aneurysm; 8. hæmorrhages.

*) A slight insufficiency of the mitral, or of the aorta valves does not always prevent the internal use of the springs. I at least have found it so in a few cases, in which other maladies made the inward use of the waters desirable, for which reason I prescribed it, though I confess, somewhat reluctantly. The water was, naturally, taken with great precaution, and I have not perceived any evil consequences from it.

rhages (except too copious hæmorrhoides, as above mentioned); 9. gastric catarrh and in general chronic gastritis; 10. cardialgy and colics; 11. recent intestinal catarrhs; 12. gravidity.

The *baths* are to be proscribed in:

1. Fevers; 2. acute inflammations; 3. advanced pulmonary tubercules, and hæmorrhages; 4. aneurysms, 5. state of great debility; 6. gastric catarrh; 7. hæmorrhages.

Dropsy proscribes the use of the plain baths; but in some few cases I have employed the vapour-baths with advantage. I have never resorted to the inward use of the springs in hydrops, though it has been, now and then, recommended.

The *menses* permit of the inward use only in anaemic persons; as long as they last, baths can only be taken when an increase of the secretion is desirable.

In *gravidity* lukewarm baths may be taken, but not till after the seventh month.

In *plethora* and active congestions one must dispense with vapour- and douche-baths, whereas lukewarm baths, when taken with precaution, can sometimes be beneficial. To persons, disposed to determinations of blood to the head, it is advisable to cover the head with linen rags wetted with cold water, when being in the bath. Where there is an apprehension that congestions to the head might come on during a course of the waters, proper means should be used to prevent them, before the patients begin their course.

Books of the same author on the Aix-la-Chapelle waters:

A description of the Mineral springs of Aix-la-Chapelle and Borecette etc. by L. Wetzlar, M. D. London. John Churchill. 1842.

Dr. Wetzlar has given a description correct, scientific and popular.
Lancet. 1842.

Dr. Wetzlar's book on the springs of Aix-la-Chapelle has afforded us valuable information on this subject. It was needed; and will be found very useful to the visitors of the Spa, where the author so judiciously exercises his talents.
British and Foreign Medical Review. 1842.

Traité pratique des propriétés curatives des eaux thermales sulfureuses d'Aix-la-Chapelle et du mode de leur emploi par L. Wetzlar, M. D. Bonn, Henry & Cohen. 1856.

Ce traité est un exposé très sagement conçu et très nettement présenté d'une station thermale importante.

Rapport de M. Durand-Fardel sur cet ouvrage dans la séance de la société de l'hydrologie médicale de Paris du 5 Janvier 1857. Voir les annales de la société. Tome troisième.

La brochure de M. le docteur Wetzlar constitue un véritable traité des propriétés médicinales des eaux d'Aix-la-Chapelle etc.

Gazette hebdomadaire de médecine et de chirurgie. Juin 1856.

Ein flüchtiger Einblick in diese Schrift thut dar, dass hier der practischen Methode der Anwendung eine Aufmerksamkeit gezollt ist, wie in wenigen Badeschriften, dass die Crisen und die Nachwirkung ausführlich besprochen und erörtert worden sind, dass die zur Behandlung kommenden Krankheiten, mit Beziehung auf die dortigen Quellen, hinreichende Würdigung erhalten haben, und dass das Buch viel ganz Neues enthält, wie die Behandlung der progressiven Muskelatrophie durch die Quellen, die specielle Würdigung der Hautkrankheiten, der Paralysen, die Behandlung inveterirter Lustsüchte durch die Quellen in Verbindung mit Jodkalium. Dabei ist der Autor nicht in Uebertreibungen gerathen, etc.

Allgemeine Medicinische Central-Zeitung. 28. Mai 1856.

Diese Schrift hat in unsern und gewiss auch in den Augen aller practischen Aerzte einen um so höhern Werth, da die Leistungen der Bäder, auf gute Beobachtungen gegründet, mit epicritisch bearbeiteten

Krankengeschichten belegt werden. Diese berücksichtigen neben Rheumatismus und Gicht, Metallecchexien, Syphilis etc., vorzugsweise die progressive Muskelatrophie, die Paralysen und Hautkrankheiten. Namentlich ist der Artikel über die Muskelatrophie in eben so anziehender als belehrender Weise behandelt und machen wir desshalb den Leser darauf aufmerksam. — Uebrigens dürfen wir nicht unerwähnt lassen, dass der Verfasser der rühmlich zu erwähnenden Schrift sich alle Mühe nahm, den Worth und die Leistungen der Aachener Bäder vorurtheilsfrei und unparteiisch darzulegen.

Recension von Herrn Professor Löschner in der Vierteljahrsschrift für die praktische Heilkunde, herausgegeben von der medicinischen Facultät in Prag. Jahrgang 1857. — 53. Band.

The contents of this book entirely accord with the title. The details of numerous interesting cases illustrate the doctrines which the author promulgates, and give to the latter a more definite character than is always met with in the writings of balneologists. The diseases in which these waters are chiefly beneficial are chronic rheumatism, old-standing syphilis, chronic affections of the skin. Other morbid conditions are benefited by them, but there is one disease which appears to be more amenable to treatment by the Aix waters than by any of the ordinary pharmaceutic preparations — it is the fatty degeneration of the muscles or progressive muscular atrophy. Four cases are given in detail, in which the results are extremely favourable To this brief summary of the indications and counter-indications for the therapeutic employment of the Aix waters, we would add our hearty commendation of the tone which pervades Dr. Wetzlar's book. Medical men anxious for information on the subject, will find it a useful and trustworthy guide.

British and Foreign medico-chirurgical Review. Octob. 1856.

Reviews or extracts are given also: in *Journal de médecine et chirurgie pratiques* 1856; in *Union médicale* 1857; in *Medicinische Aehrenlese* 1856; in *Schmidt's Jahrbücher der gesammten Medicin* 1858 etc.

Practical observations on the cure of Syphilitic affections by the Aix-la-Chapelle hot sulphureous waters. Aix-la-Chapelle. — Benrath & Vogelgesang. 1860.

Ueber die Heilwirkung der Aachener Schwefelthermen und deren Anwendung. — Aachen. Benrath & Vogelgesang. 1862.



